DELHI PUBLIC SCHOOL BULANDSHAHR

HOLIDAY HOMEWORK

Subject: English Communicative

Class: X

General Instructions

1. The Question Paper contains FOUR Sections-READING, WRITING, GRAMMAR and LITERATURE.

2. Attempt questions based on specific instructions for each part. Write the correct question number in your answer sheet to indicate the option/s being attempted.

SECTION A READING SKILLS (12 Marks)

1.Read the following passage carefully: **12**

1. Drishti was young woman who had always been fascinated by the supernatural. She had read countless books and watched numerous documentaries about ghosts and other worldly beings. So, when she heard about an abandoned hotel on the outskirts of town that was said to be haunted, she knew she had to investigate.
2. One night, Drishti decided to sneak into the dilapidated hotel with a few of her friends. As they made their way through the dark, eerie corridors, they heard strange noises and felt cold spots. They were convinced that they were not alone.
3. Suddenly, they came across a room that was different from the rest. It was filled with old cooking equipment and strange symbols etched into the walls. Drishti felt a chill run down her spine as she entered the room. She knew that this was where the most paranormal activity occurred. As they were examining the room, they heard a loud bang coming from the hallway. They froze in fear, not knowing what was coming their way. They could hear footsteps approaching, and they knew they had to hide.
4. They quickly ducked behind some old shelves as the footsteps grew louder. The sound of breathing was getting closer and closer until finally, they saw a figure appear in the doorway. It was a man wearing a chef's hat, with a face that was twisted in a sinister smile. Drishti and her friends felt their blood run cold as the man approached them. They could feel his cold breath on their faces as he leaned in, whispering in a deep voice, "You shouldn't be
5. Drishti and her friends were frozen with fear as they stared into the chef's eyes. But suddenly, the lights flickered on and the figure disappeared. They looked around the room, and everything seemed normal. They had been so scared that they hadn't realized they were in a room with faulty wiring.
6. Disappointed, they realized that their ghost hunt had been a bust. They left the hotel feeling deflated and let down. They had hoped for an exciting, spine-tingling adventure, but all they got was a scary moment caused by faulty wiring. As they drove home, they couldn't help but feel foolish for getting so worked up over nothing. They had been so convinced that they would find evidence of the paranormal that they had overlooked the simple explanation for the noises they had heard
7. Drishti learned an important lesson that night. Sometimes, the scariest things are the ones that we create in our own minds. She realized that she didn't need to chase after the supernatural to experience thrills and excitement. The world around her was full of mystery and wonder, and she was content to experience it without the need for ghosts and ghouls.

(CBSE SP 2023-24, Set 1)

Answer the following questions based on the passage given above.

(i) How does the setting contribute to the overall mood and atmosphere of the story?
(a) It creates a sense of nostalgia.
(b) It provides a sense of false security.
(c) It adds to the suspense in the story.
(d) It presents a contrast with the real world.

(ii) List two ways, how the disappointment that Drishti and her friends felt after their ghost hunt, is analogous to the feeling of waking up from a dream. Answer in 30-40 words.

(iii) What is the main flaw in Drishti's approach to investigating the haunted hotel?
(a) She was too focused on finding evidence of the paranormal.
(b) She was too skeptical and refused to believe in the possibility of ghosts.
(c) She relied too heavily on other people's accounts of the supernatural.
(d) She didn't take enough precautions to ensure her safety.

(iv) After which paragraph of the story, would the following paragraph is most likely to be placed?
They commenced walking through the hotel, Drishti's torchlight barely illuminating the darkness around her. Suddenly, they heard a loud creaking noise behind them. Drishti whipped around, pointing her flashlight in the direction of the noise. Nothing. Shaken, they all quickened their pace.
(v) Briefly explain (in 30-40 words) any two elements that classify the story as scary.
(vi) Substitute the underlined word in the following sentence with a word/phrase from paragraphs 4-6, that means the
The sound of the footsteps outside the door left her petrified and the rasping breathing added to her horror.
(vii) What is the most significant lesson that Drishi learns from her experience in the haunted hotel?
(a) The importance of avoiding risk-taking.
(b) The need to be more sceptical of the supernatural.
(c) The value of evaluating your weaknesses.
(d) The power of imagination to create suspense.
(viii) Complete the following sentence appropriately.
Based on the use of the word 'dilapidated' to describe the hotel, in Paragraph 2, we can infer that its condition was ___
(ix) Complete the sentence appropriately.
If the title, The Hotel Haunting is given to this passage, it would be an inappropriate title, as compared to The Unsettling Encounter at the Abandoned Hotel because ...
(x) State whether the given assertion is TRUE or FALSE.
The reason Drishti and her friends visited the abandoned hotel was to prove the existence of ghosts.

SECTION - B : WRITING SKILLS (07 Marks)

2. Write an application to the Principal of your school requesting him for three days leave from the school. Invent necessary details and mention the reason. **3**

3. Write a factual description, in not more than 100 words, of your favourite motorbike. **4**

SECTION - C GRAMMAR (10 Marks)

4. Complete the tasks A-C as directed:

A. Fill in the blanks (i)-(iii) with the appropriate option from those in the brackets. **3**

When we read (a) .....(of,about,from,on) a happy person we smile, (b) .....(as,because,whereas,when) if the character (c)……(is,became,are,am) angry, we frown.

B. In the following paragraph one word has been omitted from each line. Write the missing word along with the word that comes before and the word that comes after it in your answer sheet. Be sure that the word that forms your answer is underlined. **4**

	Word before	Missing word	Word after
Thomas Hardy was younger contemporary of	was	a	younger
Charles Dickens. His style rather different,	(i) …….	…….	……...
wide literary acclaim in own right, both	(ii) ……	…….	……...
as novelist and a poet. While Dickens' novels	(iii) ……	…….	……...
tended to set in an urban environment	(iv) ……	…….	……...
Hardy's focus was on the countryside			

C. Do as directed:

a)Read the following conversations and complete the passage given below. **2**

Reema: Hi Yash! How are you?
Yash: I am fine and fit.
Reema: Where were you yesterday?
Reema met Yash and asked him (i) _____. Yash said that (ii) _____ and fit.

b) Rearrange the following group of words to form a meaningful sentence:
two persons can be blamed for the murder. There are many clues pointing to the culprit.
the/find/murderer/who/real/out/is

SECTION - D LITERATURE TEXTBOOK (21 Marks)

5. Read the given excerpt and answer the questions briefly. **5**

A. Every day the frog who'd sold her
Songs for silver tried to scold her:
"You must practice even longer
Till your voice, like mine grows stronger.
In the second song last night.
You got nervous in mid-flight.

(a) Why did the frog scold the nightingale everyday?
(b) What happened to the nightingale in the second song last night?
(c) How did the frog sell her song?
(d) What are the hidden intentions of the frog behind 'You must practice even longer'?
(e) Identify the poetic device used in the second line of the given extract.

6. Answer the given questions in 30-40 words each. 4 X 2 = 8

i. Describe the passions that were stamped on the lifeless stone of the broken statue of Ozymandias.
ii. Did Nicola like Jacopo's asking the narrator to drive them to Poleta on the coming Sunday? If not, why did he glare his brother in vexation? (Two Gentlemen of Verona)
iii. How did the prospect of earning a thousand rupees stimulate the sporting and commercial instinct of the villagers? What did they do for Mrs. Packletide? (Mrs. Packletide's Tiger)
iv. The old man, shivering at times but fixed of purpose, plodded on .....'Who was that personand why was he taking so much pain? What was his 'fixed' purpose? (The Letter)

7. Answer the following question in about 150 words. 8

Love and pangs of separation transform a man and his life. Describe Ali's life before Miriam's marriage and the transformation that came after the marriage and separation of his beloved daughter.

PREVIOUS YEAR QUESTIONS FOR PRACTICE

1. The poem, ' The Frog and The Nightingale' highlights the fact that lack of confidence leads to disaster. Keeping this in mind, elaborate the statement if you accept yourself, the whole world accepts you.

2.What was the significance of the letter, in the story, "The Letter'?

3.Discuss the theme of social satire in the story, highlighting Mrs. Packletide's character.

4.Draw the contrast between 'childish' and 'artless' faces and the seriousness beyond their years visible on them. (Two Gentlemen of Verona)

5.Analyse the theme of decline and fall in 'Ozymandias'.

दिल्ली पब्लिक स्कूल बुलंदशहर

कार्य–प्रपत्र 1 (2025–26)

दिनांक : 26 / 05 / 2025 विषय – हिंदी, कक्षा – दशमी

आवश्यक निर्देश : छात्र / छात्राएँ सभी प्रश्नों के उत्तर हिंदी की अभ्यास पुस्तिका में लिखेंगे।

1. निम्नलिखित गद्यांश को ध्यानपूर्वक पढ़कर पूछे गए प्रश्नों के उत्तर लिखिए।

कभी–कभी सहज से तेज गति में परिवर्तित होते क्रोध को समय रहते नियंत्रित नहीं किया गया तो उसके परिणाम अत्यंत घातक और पश्चात्ताप के भाव जगाने वाले हो सकते हैं। कैलिफोर्निया स्टेट यूनिवर्सिटी के मनोविश्लेषक टॉम जी. स्टीवेन्स ने अपनी किताब 'ओवरकम एंगर एंड एग्रेसन' में स्पष्ट किया है कि क्रोध–नियंत्रण का एक प्रमुख तरीका यह है कि स्थिति को अपने नहीं, दूसरों के नजरिए से देखें। दूसरों को उन स्थितियों पर प्रकाश डालने के लिए प्रोत्साहित करें, क्षमा करना सीखें, बीते को बिसारने की आदत विकसित करें और किसी को चोट पहुँचाने के बजाय प्रशंसा से उसका मूल्यांकन करें। याद रखें, क्रोध–नियंत्रण से आप स्वयं को शक्तिशाली बनाते हैं। इससे आपकी खुशहाली और स्मृतियों का विस्तार होता है। यूनिवर्सिटी ऑफ सिनियाटी के वैज्ञानिकों ने अपनी किताब 50 साइंस ऑफ मेंटल इलनेस में इन कमजोरियों पर प्रकाश डालते हुए गुस्से को काबू में रखने के कारगर सूत्र दिए हैं। क्रोध–नियंत्रण से हम अपना ही नहीं, दूसरों के उजड़ते संसार को फिर से आबाद कर सकते हैं क्योंकि शांत मन सृजन में समर्थ होता है। हमारे सृजनात्मक होने से ही मानवता का हित सध सकता है। तो जब भी क्रोध आए, इन उपायों को आजमाएँ। जीवन में बिखरी हुई चीजों को सँवारने की ओर कदम खुद बढ़ चलेंगे।

(i) क्रोध–नियंत्रण से होने वाले लाभों के संबंध में अनुपयुक्त कथन है –

(क) इससे व्यक्ति स्वयं को शक्तिशाली बनाता है।
(ख) इससे व्यक्ति के जीवन में खुशहाली आती है।
(ग) इससे व्यक्ति की विस्मृतियों का विस्तार होता है।
(घ) इससे व्यक्ति की रचनात्मकता में वृद्धि होती है।

(ii) किस तरह का क्रोध अंततः पश्चात्ताप का कारण बनता है ?

(क) अत्यंत आवेग में किया गया क्रोध
(ख) सहज भाव से किया गया क्रोध
(ग) प्रायश्चित्त भाव से किया गया क्रोध
(घ) आत्मघात भाव से किया गया क्रोध

(iii) निम्नलिखित कथन (A) तथा कारण (R) को ध्यानपूर्वक पढ़िए । उसके बाद दिए गए विकल्पों में से कोई एक सही विकल्प चुनकर लिखिए :

कथन (A) – क्रोध नवसृजन का संहारक है।
कारण (R) – क्रोध अवस्था में क्षमाशीलता न्यून हो जाती है।

(क) कथन (A) तथा कारण (R) दोनों गलत हैं।
(ख) कथन (A) गलत है, लेकिन कारण (R) सही है।
(ग) कथन (A) सही है तथा कारण (R) उसकी सही व्याख्या है।
(घ) कथन (A) सही है, लेकिन कारण (R) उसकी सही व्याख्या नहीं है।

(iv) गुस्से पर काबू करना मानवता के लिए किस प्रकार साधक सिद्ध हो सकता है ?

(v) क्रोध को किस प्रकार नियंत्रित करना चाहिए ?

2. पदबंध पर आधारित निम्नलिखित प्रश्नों के उत्तर निर्देशानुसार लिखिए।

(i) पुराने ज़माने के लोग आठवाँ दरजा पास करके नायब तहसीलदार बन जाते थे। वाक्य में रेखांकित पदबंध का भेद लिखिए।

(ii) पतंग हवा में उड़ती चली जा रही थी। वाक्य में क्रिया पदबंध चुनकर लिखिए।

(iii) सर्वनाम पदबंध, संज्ञा पदबंध से किस प्रकार भिन्न है ? उदाहरण देकर स्पष्ट कीजिए।

(iv) महंत जी लड़ाकू और दबंग प्रकृति के आदमी हैं। वाक्य में पदबंध का भेद बताते हुए कारण भी स्पष्ट कीजिए।

(v) क्रिया विशेषण पदबंध का एक उदाहरण देकर वाक्य में प्रयोग कीजिए।

3. रचना के आधार पर वाक्य पर आधारित निम्नलिखित प्रश्नों के उत्तर निर्देशानुसार लिखिए।

(i) आपकी अच्छी कविताओं को सभी पसंद करते हैं। इस वाक्य को मिश्र वाक्य में बदलिए।

(ii) जब मैं उनकी डाँट सुनता तब आँसू बहाने लगता। इस वाक्य को सरल वाक्य में बदलिए।

(iii) संयुक्त वाक्य की पहचान के कोई दो बिंदु लिखिए।

(iv) मेरी इच्छा है कि मैं केदारनाथ जाऊँ। रचना के आधार पर वाक्य का भेद लिखिए।

4. मुहावरों पर आधारित निम्नलिखित प्रश्नों के उत्तर निर्देशानुसार लिखिए।

(i) ऐसा काम क्यों करते हो जिससे तुम्हें ––––––––––पड़े। उपयुक्त मुहावरे से रिक्त स्थान भरिए।

(ii) 'ठंडा पडना' मुहावरे का अर्थ लिखकर वाक्य प्रयोग कीजिए।

(iii) 'बढ़ा–चढ़ाकर बात करना' अर्थ के लिए उपयुक्त मुहावरा लिखिए।

(iv) परीक्षा के निकट आते ही छात्रों की नींदें उड़ जाती हैं। वाक्य में से मुहावरा छाँटकर एक अन्य वाक्य स्वयं बनाइए।

5. निम्नलिखित गद्यांश को पढ़कर पूछे गए प्रश्नों के उत्तर के लिए सही विकल्प चुनकर लिखिए। (सी०बी०एस०ई० 2024)

सदियों पूर्व, जब लिटिल अंदमान और कार–निकोबार आपस में जुड़े हुए थे तब वहाँ एक सुंदर–सा गाँव था। पास में एक सुंदर और शक्तिशाली युवक रहा करता था। उसका नाम था तताँरा। निकोबारी उसे बेहद प्रेम करते थे। तताँरा एक नेक और मददगार व्यक्ति था। सदैव दूसरों की सहायता के लिए तत्पर रहता। अपने गाँववालों को ही नहीं, अपितु समूचे द्वीपवासियों की सेवा करना अपना परम कर्त्तव्य समझता था। उसके इस त्याग की वजह से वह चर्चित था। सभी उसका आदर करते। वक्त मुसीबत में उसे स्मरण करते और वह भागा–भागा वहाँ पहुँच जाता। दूसरे गाँवों में भी पर्व–त्योहारों के समय उसे विशेष रूप से आमंत्रित किया जाता। उसका व्यक्तित्व तो आकर्षक था ही, साथ ही आत्मीय स्वभाव की वजह से लोग उसके करीब रहना चाहते। पारंपरिक पोशाक के साथ वह अपनी कमर में सदैव एक लकड़ी की तलवार बाँधे रहता। लोगों का मत था, बावजूद लकड़ी की होने पर, उस तलवार में अद्भुत दैवीय शक्ति थी। तताँरा अपनी तलवार को कभी अलग न होने देता। उसका दूसरों के सामने उपयोग भी न करता। किंतु उसके चर्चित साहसिक कारनामों के कारण लोग–बाग तलवार में अद्भुत शक्ति का होना मानते थे। तताँरा की तलवार एक विलक्षण रहस्य थी।

(i) गाँव के लोग तताँरा को क्यों पसंद करते थे ?

(क) वह सुंदर और शक्तिशाली था।

(ख) वह नेक और मददगार व्यक्ति था।

(ग) वह बेहद शांत और सभ्य था।

(घ) वह सुंदर, बलिष्ठ और भोला व्यक्ति था।

(ii) दूसरे गाँव के लोग भी पर्व–त्योहारों के समय तताँरा को क्यों आमंत्रित करते थे ?

(क) उसके आकर्षक व्यक्तित्व के कारण

(ख) उसके साहसिक कारनामों के कारण
(ग) उसके त्याग और सेवाभाव के कारण
(घ) उसकी विलक्षण तलवार के कारण

(iii) तताँरा की तलवार लोगों के बीच एक विलक्षण रहस्य क्यों थी ?
(क) क्योंकि तताँरा उसे कभी–कभी अपने से अलग करता था।
(ख) क्योंकि तताँरा की तलवार लकड़ी की बनी हुई थी।
(ग) क्योंकि तताँरा उसका प्रयोग दूसरों के सामने नहीं करता था।
(घ) क्योंकि तताँरा अकेले ही अद्‌भुत, साहसिक कारनामें किया करता था।

(iv) पारंपरिक पोशाक से क्या अभिप्राय है ?
(क) गाँव के सभी लोगों द्‌वारा पहने जाने वाली पोशाक
(ख) गाँव के युवाओं द्‌वारा पहने जाने वाली पोशाक
(ग) वो पोशाक जो किसी प्रदेश विशेष में सदियों से पहनी जाती हो।
(घ) वो पोशाक जो किसी विशेष अवसर पर पहनी जाती हो।

(v) निम्नलिखित कथन (A) तथा कारण (R) को ध्यानपूर्वक पढ़िए । उसके बाद दिए गए विकल्पों में से कोई एक सही विकल्प चुनकर लिखिए :

कथन (A) – तताँरा समूचे द्वीपवासियों की सेवा करना अपना परम कर्त्तव्य समझता था।
कारण (R) – वह एक सुंदर और शक्तिशाली युवक था।
(कं) कथन (A) तथा कारण (R) दोनों गलत हैं।
(ख) कथन (A) गलत है, लेकिन कारण (R) सही है।
(ग) कथन (A) सही है लेकिन कारण (R) उसकी गलत व्याख्या करता है।
(घ) कथन (A) तथा कारण (R) दोनों सही हैं तथा कारण (R) कथन (A) की सही व्याख्या करता है ।

6. गद्‌य खंड पर आधारित निम्नलिखित प्रश्नों के उत्तर लगभग 25–30 शब्दों में लिखिए।

(i) सुभाष बाबू ने जुलूस क्यों निकाला था ? लेखक ने इस दिन को अपूर्व क्यों कहा ? 'डायरी का एक पन्ना' पाठ के आधार पर लिखिए।

(ii) शिक्षा और अनुभव में से भाई साहब ने किसे श्रेष्ठ बताया तथा क्यों ? 'बड़े भाई साहब' पाठ के आधार पर लिखिए।

(iii) तताँरा वामीरो एक दूसरे के सामने आकर चुप क्यों रह जाते थे ? 'तताँरा–वामीरो कथा' पाठ के आधार पर लिखिए।

7. पद्‌य खंड पर आधारित निम्नलिखित प्रश्नों के उत्तर लगभग 25–30 शब्दों में लिखिए।

(i) मृग कस्तूरी को वन में क्यों ढूँढ़ता है ? इस दृष्टांत से कबीर क्या कहना चाहते हैं ? 'साखी' पाठ के आधार पर लिखिए।

(ii) मीरा कुसुंबी साड़ी क्यों पहनना चाहती है ? यमुना के तट का क्या महत्त्व है ? 'पद' पाठ के आधार पर लिखिए।

8. संचयन पर आधारित निम्नलिखित प्रश्नों के उत्तर लगभग 50–60 शब्दों में लिखिए।

(i) ''हरिहर काका कहानी पारिवारिक जीवन में घर कर चुकी स्वार्थपरता और हिंसा–प्रवृत्ति को बेनकाब करती है।'' तर्कसंगत उत्तर दीजिए। (सी०बी०एस०ई० 2023)

(ii) 'हरिहर काका' कहानी वृद्‌धों के प्रति संवेदनहीन होते समाज की कथा है। इस कथन को कहानी के आधार पर उदाहरण सहित सिद्‌ध कीजिए। (सी०बी०एस०ई० 2022)

9. निम्नलिखित में से प्रत्येक विषय पर दिए गए संकेत बिंदुओं की सहायता से लगभग 120 शब्दों में अनुच्छेद लिखिए।

(i) कंप्यूटर युग (सी०बी०एस०ई० 2025)

संकेत बिंदु – कंप्यूटर का बढ़ता उपयोग, कंप्यूटर के विविध क्षेत्र, कंप्यूटर क्रांति

(ii) जीवन का सच्चा सुख संतोष में
संकेत बिंदु – संतोष का महत्त्व, इच्छा नियंत्रण, सुखी जीवन का आधार

10. निर्देशानुसार औपचारिक–पत्र लिखिए।

(i) बस में छूट गए सामान को आपके घर तक सुरक्षित रूप से पहुँचाने वाले बस कंडक्टर की प्रशंसा करते हुए उसे पुरस्कृत करने के लिए परिवहन अध्यक्ष को एक पत्र लगभग 100 शब्दों में लिखिए। (सी०बी०एस०ई० 2019)

(ii) आप अर्णव/अरनी हैं और क०ख०ग० नगर के निवासी हैं। आपके क्षेत्र के बाज़ारों में प्रतिबंधित होने के बावजूद प्लास्टिक थैलियों का उपयोग धड़ल्ले से हो रहा है। इस समस्या की ओर ध्यान आकृष्ट करते हुए नगर निगम अधिकारी को लगभग 100 शब्दों में एक पत्र लिखिए। (सी०बी०एस०ई० 2024)

11. निर्देशानुसार सूचना–लेखन कीजिए।

(i) विद्यालय की सांस्कृतिक संस्था 'रंगमंच' की सचिव लतिका की ओर से 'स्वरपरीक्षा' के लिए इच्छुक विद्यार्थियों को यथासमय उपस्थित रहने की सूचना लगभग 60 शब्दों में लिखिए। समय और स्थान का उल्लेख भी कीजिए। (सी०बी०एस०ई० 2019)

(ii) आप हिंदी छात्र परिषद के सचिव प्रगण्य हैं। आगामी सांस्कृतिक संध्या के बारे में अनुभागीय दीवार पट्टिका के लिए लगभग 60 शब्दों में सूचना तैयार कीजिए। (सी०बी०एस०ई० 2019)

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DELHI PUBLIC SCHOOL, BULANDSHAHR

Mid Semester Practice Sheet (Session:2025-2026)
Subject: JAPANESE
Class: X

General instructions:

1. **You may attempt any section at a time**
2. **All questions of that particular section must be attempted in the correct order.**

Section A Reading Comprehension

Q1 A) Please read the following passage and answer the questions given below in hiragana.

きょねん の クリスマス に わたし の かぞく が 日本 から きました。たくさん おみあげ を くれました。はは は 日本 の おまんじゅう を くれました。あに は 日本の ほん をくれました。おいしい おまんじゅう は 、アメリカ に ありませんから、とても うれしかったです. わたしは、はは に アメリカの くちべに を 二本 あげました。くちべには アメリカで とても たかい ですから はは は とても よろこびました。あに に アメリカ の チョコレート を 三つ あげました。そして みんな で カーメルに いきました。

りょうしん___parents

くちべに －Lip stick.

おまんじゅう-----japanese cake

うれしい----delightful.

よろこぶ-----gald pleased.

しつもの：

1. きょねん の クリスマス に だれが きましたか。
2. わたし は はは に なに を もらいました か。
3. おいしい おまんじゅう は アメリカ に ありますか。
4. はは は なに を もらいました か。
5. くちべに は アメリカ で とても たかい ですか。

B) Please read the following passage and write true (O)or false (x) in the brackets given.

おおさか、こうべ、きょうと、なら

おおさか は おおきい まちです。ビルや くるまや ひとが おおくて、にぎやかです。こうべ と きょうと と なら は おおさか から ちかいです。きょうと と なら は ふろい おてらや じんじゃ が たくさん ありますから、がいこくじんも たくさん あそびに きます。

こうべ は ふろいもの が あまり ありませんが、まち の うしろに やま が まえに うみ が あって、すてきな まち です。わかい ひと は こうべ が すきです。おおさか に くうこう が ふたつ あります。あたらしい くうこう は

うみ　の　うえに　あって、ひろくて、きれいです。

1)　おおさか　は　ふろい　おてら　が　たくさん　あって、しずかな　まちです。（　）
2)　きょうと　と　なら　で　がいこくじん　を　たくさん　みます。（　）
3)　こうべ　の　ちかく　に　うみ　と　やま　が　あります。（　）
4)　おおさか　の　あたらしい　くうこう　は　きれいですが、せまいです。　（　）
5) きょうと　と　なら　で　たくさん　ふろい　おてらや　じんじゃ　が　たくさん　　あります。（　）

Section B　Writing Skills

Q 2. Write an Insta/ chat in plain form with your friend on the given topic in Minimum 6 sentences:

1.さいきん　の　みた　えいが。

Q3. Complete the dialogue 。Write atleast 5 line

きむら：あなた　の　しゅみ　は　なんですか。

なかむら：_____。

Q4. Choose the odd one out：—

１）はやい　　おそい　　きれい　　かるい

２）１０月　　２０１２年　　四週間　　５時半

３）おおきい　　ちいさい　　しずか　　おおい

４）はなび　　かみなり　　じしん　　こうずい

Section C　Grammar

Q5. Fill in the blanks with suitable particles：—

１．わたし　は　しゃしん　を　みて　かぞく_____おもいだしました。

１．に　　２．と　　３．を　　４．は

２．かとうさん　は　りょうり　_____じょうずですが、そうじ　が　へたです。

１．に　　２．が　　３．で　　４．は

３．でんしゃ　の　チケット　は　げんきん_____はらって　ください。

１．を　　２．で　　３．に　　４．は

４．ダイエットは　からだ_____　よくないですよ。

１．と　　２．に　　３．を　　４．の

Q6. Fill in the blanks with suitable grammar patterns.

1. きょう　あさ　ごはん　を（　　）で　がっこう　へ　きました。（たべます）
2. わたし　の　うち　は　あまり（　　）です。（おおきいです）
3. ともだち　を（　　）に　えき　へ　いきます。（むかえます）
4. たなかせんせい　は　とても　(　　）ひとです。（しんせつです）

Q7. Fill in the blanks with suitable words to make a meaningful sentence：

そろそろ、	あとで、	ぜんぜん、	なかなか、	よく、
だんだん、	ゆっくり、	どれぐらい、		

1. いま　いそがしい　ですから、_____　きて　ください。
2. わたし　は　かんじ　が　_____　わかりません。
3. もう　9じ　ですから、_____　しつれいします。
4. 日本では_____　ぞう　を　みる　こと　が　できません。
5. これから_____　さむくなります。
6. やまださん　は　にほんご　が_____　わかります。
7. かおいる　が　わるいですから、きょう　は_____　やすんで　ください。
8. _____　ほん　を　かりる　こと　が　できますか。

SECTION D　　Kanji

Q 8 Write the Hiragana readings for the underlined kanjis in the following sentences: -

1．　ゆきさん　は　日本語　の　学生　ですか。　_____

2. 中川さん　の　お父さん　は　ぎんこうで　はたらいています。　_____
3. きのう　あたらしい　じしょ　を買いました。　_____
4. はは　は　会社　で　はたらいています。　_____
5．　午後　5じに　うち　へ　かえります。　_____
6．なかむらさん　の　しゅみ　は　読書　です。　_____

Q9. Write the kanjis for the underlined words in the following sentences:

1. えき　から　大学　まで　なんふん　ぐらい　かかりますか。　_____
2．がっこう　の　でんわ　ばんごう　を　していますか。　_____
3．きむらせんせい　は　ちゅうごく　から　きました。　_____
4．とうきょう　は　とても　ゆうめいな　ところ　です。　_____
5．きょう　しんぶん　を　まだ　よんでいません。　_____

６．ゆうびんきょく　の　　うしろ　　に　はなや　が　あります。＿＿＿＿＿＿.

DELHI PUBLIC SCHOOL,BULANDSHAHR
HOLIDAY HOMEWORK(SESSION:2025-2026)

Subject:Urdu

Class: X

Part A:Reading Comprehention

حصہ (الف) عبارت فہمی ، شعر فہمی

سوال(ا) درج ذیل عبارت کو غور سے پڑھیے۔

'' ڈاکٹر ذاکر حسین کی شخصیت کے کئی اہم پہلو تھے ۔ وہ بیک وقت ایک صاحب طرز ادیب ، ماہر تعلیم ، قومی رہنما اور سیاست داں تھے ۔ وہ جامعہ ملیہ اسلامیہ ، نئی دہلی اور علی گڑھ مسلم یونیورسٹی کے وائس چانسلر رہے ۔ انھوں نے صوبہ بہار کے گورنر ، نائب صدر اور صدر جمہوریہ ہند کی حیثیت سے ملک وقوم کی غیر معمولی خدمات انجام دیں ''۔

ذاکر صاحب کا ادبی سفر دنیا کی چند اہم کتابوں کے ترجموں سے شروع ہوا ۔ ان ترجموں میں مشہور فلسفی افلاطون کی کتاب '' ریاست '' اور اڈون کینن کی '' سیاسی اقتصادیات '' وغیرہ شامل ہیں ۔ انھوں نے جرمنی زبان میں گاندھی جی پر ایک کتاب لکھی ۔ بچوں کی تعلیم وتربیت اور بچوں کے ادب سے انھیں خصوصی دلچسپی تھی ۔ انھوں نے بچوں کے لئے متعدد مضامین اور کہانیاں لکھیں ۔ ابوّ خاں کی بکری، لومڑی کی چالاکی ، مور کا حسن ، اونٹ کا ضبط اور گھوڑے کی نرمی وغیرہ ان کی مشہور کہانیاں ہیں ۔

(a) ڈاکٹر ذاکر حسین تھے ؟

(i) ماہرتعلیم (ii) شاعر

(iii) خطوط نگار (iv) وزیراعظم

(b) ذاکر صاحب کس یونیورسٹی کے وائس چانسلر تھے ؟

(i) مولانا آزاد (ii) دہلی

(iii) عثمانیہ (iv) علی گڑھ

(c) ذاکر صاحب کا ادبی سفر کس سے شروع ہوا ؟

(i) شاعری (ii) خطوط

(iii) تراجم (iv) نظم

(d) ذاکر صاحب کو کس سے خصوصی دلچسپی تھی ؟

(i) نثر (ii) نظم

(iii) بچوں کے ادب (iv) سیاست

(e) ذاکر صاحب نے گاندھی جی پر کون سی زبان میں کتاب لکھی تھی ؟

(i) اردو (ii) ہندی

(iii) انگریزی (iv) جرمنی

سوال(۲) مندرجہ ذیل اشعارکو پڑھیں اوران پر دئے گئے سوالوں کے جواب لکھیں۔

دونوں کا مسکن ، ہندوستاں ہے دو بلبلیں ہیں اک گلستاں ہے

اک سرزمیں ہے اک آسماں ہے دونوں کا یک جا سودوزیاں ہے

مل جل کے رہنا ہے کامرانی ہندو مسلماں ، قومیں پرانی

(a) اک ’ سرزمیں‘ کا کیا مطلب کیا ہے ؟

(i) مل جل کر (ii) اپنا اپنا

(iii) وطن (iv) رنگ

(b) مسکن سے کیا مراد ہے ؟

(i) گھر (ii) ہندوستاں

(iii) مذہب (iv) رنگ

(c) دونوں کا یک جاں ’ سودوزیاں ‘ سے کیا مراد ہے ؟

(i) دل (ii) مذہب

(iii) فائدہ اور نقصان (iv) ملک

(d) مل جل کے رہنا ہے ’ کامرانی ‘ سے کیا مراد ہے ؟

(i) کامیابی (ii) آپسی میل محبت

(iii) ملنا جلنا (iv) ایک جگہ

(e) بند میں بلبلیں کہا گیا ہے ۔

(i) مل جل کر (ii) ہندومسلمان

(iii) وطن (iv) رنگ

سوال(۳) دی گئی عبارت کے سوالوں کے جواب دیں:

'' نظیر اکبر آبادی کا پورا نام ولی محمد تھا ۔ وہ دہلی میں پیدا ہوئے تھے ۔اپنے خاندان کے ساتھ آگرے میں آکر بس گئے ۔ نظیر عوامی شاعر تھے ۔انکی شاعری میں ہندوستانی ماحول کی عکاسی کی گئی ہے ۔ انھوں نے یہاں کے موسموں میلوں ، تہواروں ، اور انسانی زندگی کے مختلف پہلوؤں پر نظمیں لکھیں۔ زبان کی سادگی نظیر کی بہت بڑی خوبی ہے ۔ انکے پاس الفاظ کا غیرمعمولی ذخیرہ تھا ۔ وہ موقعےاور موضوع کے اعتبار سے مناسب الفاظ کا استعمال کرتے تھے ۔ انکے کلام میں تاثیر بہت ہے۔ روٹیاں بنجارہ نامہ ،مفلسی ، ہولی آدمی نامہ وغیرہ انکی مشہورنظمیں ہیں ۔ اسی طرح کے ہندوستان کے مختلف موسموں ، پھلوں اورشخصیتوں پر نظیرکی نظمیں بھی اپنی خاص پہچان رکھتی ہیں ۔ وہ اردو کے معروف شاعر ہیں''۔

(a) نظیر شاعر تھے ؟

(i) رومانوی (ii) عشقیہ

(iii) ہجویہ (iv) عوامی

(b) نظیر کی شاعری میں ملتی ہے ؟

(i) بندگی (ii)بےروزگاری

(iii) بےرواداری (iv) ہندوستانی ماحول کی عکّاسی

(c) نظیر پیدا ہوئے تھے ؟

(i) اکبر آباد (ii) آگرہ

(iii) دلّی (iv) ان میں سے کوئی نہیں

(d) نظیر کا پورا نام تھا ؟

(i) نظیر اکبر آبادی (ii) اکبر الہ آبادی

(iii) نظیرالدین (iv) ولی محمد

(e) نظیر کی زبان کی خوبی ہے ؟

(i) سادگی (ii) عشقیہ

(iii) ہجویہ (iv) عوامی

سوال(۴) مندرجہ ذیل اشعارکو پڑھئے اور دئے گئے سوالوں کے جواب لکھیئے ۔

ہے دنیا جس کا ناؤں میاں یہ اور طرح کی بستی ہے
جو مہنگوں کو تو مہنگی ہے اور سستوں کو یہ سستی ہے
یاں ہردم جھگڑے اٹھتے ہیں ہر آن عدالت بستی ہے
گرمست کرے تو مستی ہے اور پست کرے تو پستی ہے
کچھ دیر نہیں اندھیر نہیں ، انصاف اور عدل پرستی ہے
اس ہاتھ کرو اس ہاتھ ملے ، یاں سودا دست بدستی ہے

(a) دنیا میں کون سی نعمت سب سے بڑی ہے ؟

(i) اچھائی (ii) پستی

(iii) صداقت (iv) انصاف

(b) زندگی میں کامیابی کے لئے ہمیں کیا کرنا چاہئے ؟

(i) اچھائی (ii) ایمانداری

(iii) عدل پرستی (iv) عہد

(c) یہ دنیا مہنگوں کے لئے ہے ؟

(i) مہنگی (ii) سستی

(iii) آرام کی (iv) سہولت کی

(d) یہ بند کس شاعر کا ہے ؟

(i) نظیر اکبر آبادی (ii) اسمٰعیل میرٹھی

(iii) میر تقی میر (iv) میر انیس

(e) بند میں عدالت کس لئے ہے ؟

(i) اچھائی (ii) پستی

(iii) صداقت (iv) انصاف

سوال(۵) مندرجہ ذیل معروضی سوالات کے جوابات لکھیئے ؟

سوال(1)وہ بے مثال تھا ۔ مثال ہے ؟

(i)فعل مجہول (ii) فعل متعدی

(iii)فعل ناقص (iv)فعل معروف

سوال(2) کچھ لوگ چلا رہے ہیں ۔مثال ہے ؟

(i) مترداف (ii) فعل

(iii) اسم (iv) صفت

سوال(3) اس کو بلا لانا ۔ مثال ہے ؟

(i)رموزاوقاف (ii) ضمیرغائب

(iii) متضاد (iv) اسم

سوال(4) کھانا آ گیا ۔ مثال ہے ؟

(i)فعل مجہول (ii)ضمیر

(iii)فعل ماضی (iv) صفت

سوال(5)جس سے اسم کی تعداد ظاہر ہوتی ہے ؟

(i) صفت مقداری (ii) ضمیر غائب

(iii) صفت عددی (iv)کہاوت

سوال(6) کام ہو رہا ہے ؟

(i) زمانہء مستقبل (ii) زمانہءحال

(iii) زمانہءماضی (iv) مترادف

سوال(7) ’ لکھنؤ ‘ ہے ؟

(i) اسم نکرہ (ii) فعل

(iii) اسم معرفہ (iv) ضمیر

سوال(8)جو اپنے حقیقی معنی میں استعمال ہو ؟

(i) محاورہ (ii) اسم خاص

(iii) فعل (iv) کہاوت

سوال (9) **شجرو حجر** ۔ یہ مثال ہے ؟

(i) ضمیر (ii) مترادف

(iii) فعل مجہول (iv) صفت

سوال(10) جس میں **وسعت** پائی جاتی ہے ؟

(i) کہاوت (ii) محاورہ

(iii) قافیہ (iv) ردیف

سوال(11) **رنج** کا متضاد ہے ؟

(i) صبح (ii) عام

(iii) باطن (iv) راحت

سوال(12) بات کرنے والا اپنے **مخاطب** کے لیے جو لفظ استعمال کرتا ہے ؟

(i) ضمیر غائب (ii) ضمیر متکلم

(iii) مجاز (iv) ضمیر حاضر

سوال(13) **گوالا** کا مونث ہے ؟

(i) گوالی (ii) گوالن

(iii) گولا (iv) ان میں سے کوئی نہیں

سوال(14) لفظ ' **ادیب** ' کی جمع ہے ؟

(i) ادبا (ii) ادبیات

(iii) مصنفہ (iv) ان میں سے کوئی نہیں

سوال(15) سلیم گاتا ہوگا ۔ یہ مثال ہے ؟

(i) فعل ناقص (ii) فعل ماضی

(iii) فعل لازم (iv) فعل حال

سوال(16) سلیم نے سارا کھانا کھا لیا ؟

(i) فعل ناقص (ii) فعل مجہول

(iii) فعل لازم (iv) فعل متعدی

سوال(٦) مندرجہ ذیل سوالات کے مختصر جواب لکھیئے ۔

(i) کنھیا لال کپور کی مشہور کتابوں کے نام لکھیئے ؟

(ii) ہماری صحت کے لئے کیا کیا ضروری ہیں ؟

(iii) سبق '' قول کا پاس'' میں کون سی اہم بات جتائی گئی ہے ؟

سوال(٧) مندرجہ ذیل سوالات بہت مختصر جواب لکھیئے ۔

(i) خدا ہمیشہ کن کی مدد کرتا ہے ؟

(ii) پہلے کے زیادہ تر لوگ کیسے زندگی بشر کرتے تھے ؟

(iii) پانی کی آلودگی کس طرح پیدا ہوتی ہے ؟

سوال(٨) مندرجہ ذیل سوالات مختصر جواب لکھیئے ۔

(i) نظیر اکبر آبادی کی مشہور نظموں کا نام لکھیئے ؟

(ii) میر تقی میؔر کی مثنویوں کے نام لکھیئے ؟

(iii) نظم' نیکی و بدی ' کا موازنہ کیجئے ؟

سوال(٩) مندرجہ ذیل سوالات میں بہت مختصر جواب لکھیئے ۔

(i) نظم' حمد ' میں کیا نصیحت دی گئی ہے ؟

(iii) دل میں فروتنی کو جگہ کون دیتا ہے ؟

(iii) ' خالی ظرف کے صدا دینے ' سے کیا مراد ہے ؟

سوال(١٠) نظم '' **حمد** '' کا مرکزی خیال لکھیئے ؟

--یا--

'' **بے تکلفی** '' سبق آپ کو کیسا ، اس کی وجوہات بیان کیجئے ۔

سوال(١١) ' **منشی پریم چند** ' کی سوانح حیات تحریر کیجئے ۔

.. یا ..

'' **میر تقی میؔر** '' کی سوانح حیات اپنے الفاظ میں تحریر کیجئے ؟

DELHI PUBLIC SCHOOLBULANDSHAHR

Mid Semester Exam Revision Worksheet (Session:2025-2026)

Subject: French (018)

Class: X Max. Marks: 50

SECTION –A (Compréhension écrite) 10 Marks

Q.1. Lisez le texte et choisissez la bonne réponse.

Le pass sanitaire est un document, qu'il soit au format papier ou numérique, attestant que son porteur possède un degré d'immunité à une maladie contagieuse. La certification publique est une action que les gouvernements peuvent entreprendre pour atténuer une épidémie. Le pass sanitaire est entré en vigueur sur le territoire national le 9 juin 2021 et a été prolongé en août avec de nouvelles mesures. Des mesures restrictives pour endiguer l'épidémie

Le pass sanitaire est un pass au format numérique de l'application Tous Anti Covid ou au format papier, qui fournit un justificatif de santé, parmi les 3 suivants : le carnet de vaccination avec un calendrier vaccinal complet, un test RT-PCR négatif, un test RT-PCR positif PCR ou test antigénique attestant de la guérison du Covid-19, datant d'au moins 11 jours et de moins de 6 mois. Depuis le 9 août 2021, elle est obligatoire et s'applique aux activités de restauration commerciale, aux services et établissements de santé, sociaux et médico-sociaux à l'égard des accompagnateurs ou des visiteurs, aux déplacements longue distance ainsi qu'aux grands magasins et centres commerciaux de plus de 20 000 m² lorsque leurs caractéristiques et la gravité des risques de contamination le justifient.

Depuis le 30 août 2021, « le pass sanitaire » est rendu applicable aux personnes et salariés qui travaillent dans ces lieux, établissements, services ou événements. Le carnet de santé français certifie qu'une personne est vaccinée contre le Covid-19, qu'elle a un résultat de test de dépistage négatif ou qu'elle a été infectée puis guérie du coronavirus. Pour présenter votre pass sanitaire, vous devez vous rendre sur l'application Tous Anti Covid, dans la rubrique intitulée « Carnet ». L'utilisateur peut « intégrer ses preuves numérisées dans le cahier », pour les stocker et les présenter facilement. Les mineurs concernés Depuis le 30 septembre 2021, le « laissez-passer sanitaire » est obligatoire pour les mineurs de plus de 12 ans et deux mois. Les mineurs âgés d'au moins 12 ans et deux mois devront désormais présenter un QR code pour accéder à certains lieux, comme les restaurants et les cinémas, mais aussi pour participer à certaines sorties scolaires.

Q.A. Répondez aux questions suivantes :

1. « Le pass sanitaire », qu'est-ce que c'est ?
2. Quels sont les tests à passer comme justificatifs à fournir pour le pass sanitaire ?
3. « La certification publique » ça veut dire quoi ?

Q. B. Dites vrai ou faux :

1. Le carnet de santé français certifie qu'une personne est vaccinée contre le Covid-19.
2. Depuis le 30 septembre 2021, le « laissez-passer sanitaire » est obligatoire pour les adultes.
3. L'utilisateur peut éliminer ses preuves numérisées dans le cahier ».
4. Pour présenter votre pass sanitaire, vous devez vous rendre sur l'application Tous Anti Covid.
5. Depuis le 9 août 2021, le pass sanitaire est obligatoire.
6. Avec un QR code les mineurs âgés d'au moins 12 ans et deux mois peuvent accéder à certains lieux.

Q.C. Trouvez dans le texte.

1. Une conjonction - _____
2. Un adjectif - _____
3. La forme verbale de « la possession » - _____
4. Le contraire de « Langueur » - _____
5. Le synonyme de « Commune » - _____
6. La forme nominale de « Contaminer »Deux verbes à l'imparfait.

SECTION B (EXPRESSION ÉCRITE) 10 MARKS

2. Écrivez une lettre d'environ 80 mots:

a. Écrivez une lettre à votre ami(e) décrivant votre nouveau boulot (80 mots) :
b. Écrivez une lettre à votre frère sur le système d'éducation en France.
c. Écrivez une lettre à votre ami[e] racontant une fable en forme d'une lettre. [80 mots]
d. Écrivez une lettre à un ami français expliquant le système politique en Inde. [80 mots]

Faites DEUX des questions suivantes :

3. a. Mettez le texte dans le bon ordre et récrivez :

Serveur : Oui Madame, vous ne serez pas déçue ! Et pour vous ?

Cliente 1 : Non, merci. Je n'aime pas cette tarte. Avez-vous un gâteau au chocolat ?

Serveur : Entrez Mesdames ! Asseyez-vous !

Cliente 1 : Pour moi, « poisson avec légumes du jour ».

Serveur : Voulez-vous notre spécialité, la tarte au citron ?

Cliente 1 : Bonjour Monsieur ! Nous sommes deux.

Cliente 2 : Vous faites toujours d'excellents steaks ? Je prends un steak du chef.

Serveur : Très bien. Dans cinq minutes, mesdames.

Cliente 2 : Super ! Un gâteau et deux tasses de café pour nous, sil vous plaît.

Serveur : Bien sûr ! Presque tout le monde aime ce gâteau.

b. Vous avez envie d'aller au pique-nique pendant le temps libre. Rédigez un message à votre ami[e] s'il/si elle s'intéresse.

c. Mettez le dialogue en ordre :

Moi : Je veux les romans policiers et les fables.

Moi : Bonjour Monsieur. Je viens pour rendre ces livres et

pour en emprunter des autres.

Moi : Merci. Au revoir.

Le bibliothécaire : Bonjour Monsieur. Comment puis-je vous aider ?

Le bibliothécaire : Ça va. Je vais les entrer sur votre compte.

Le bibliothécaire : Au revoir.

Moi : Oui, bien sûr monsieur.

Le bibliothécaire : Et voilà les livres.

Le bibliothécaire : Êtes-vous abonné et membre de cette bibliothèque ?

Moi : Voilà ma carte de lecture.

Le bibliothécaire : D'accord. Quels livres voulez-vous emprunter ?

c. Complétez le texte suivant avec les mots donnes ci-dessous :

[comprendre / connaissance / connaître / découvre / étrangère / évidemment / frontière / plaire /
Le but _____ d'un échange est _____ d'améliorer la langue _____ et de mieux _____ un pays. Dès qu'on passe la _____, on _____ une nouvelle culture. On fait la _____ de coutumes ou d'habitués étrangers qui vont nous _____, qui vont nous _____ ou qu'on ne va jamais bien _____principal / surprendre]

SECTION –C (Grammaire) 20 Marks

4. Mettez les verbes aux temps convenables :

1. _____ -vous à la maison toute la journée ? [rester]
2. Lorsque j'habitais à Paris, j'_____ voir la tour Eiffel chaque soir avec mon copain. [aller]
3. L'actrice _____ dans la salle il y a deux minutes. [entrer]
4. _____ tout ce que tu veux. [acheter]
5. Dès qu'ils _____, ils ont regardé la télévision. [dîner]
6. Aussitôt que le jardinier _____ les bulbes, il les arrosera. [planter]
7. Dès que je me serai réveillé, je te chercherai et nous _____ à la gare ensemble. [aller]
8. Ils _____ leurs passeports le jour après- demain. [avoir]
9. Si tu voulais, tu _____ le faire. [pouvoir)

5 (a) Mettez au négatif :

1. As-tu déjà fait du camping ?
2. Voulez-vous dire quelque chose ?
3. Quelqu'un peut m'aider ?
4. Vas-tu souvent au Québec ?
5. Quelques étudiants ont fait leurs devoirs ?

5(b). Répondez aux questions suivantes au négatif :

1. Est-ce qu'il veut du vin ou de la bière ?
2. Est-ce que vous avez déjà décidé quoi manger ?
3. Est-ce que tu vois quelqu'un dans la rue ?
4. Y a-t-il souvent de la fumée sans feu ?
5. Avez-vous appris quelque chose ?
6. Quelques étudiants ont fait les devoirs ?
7. Mes clés sont quelque part ?

OU

5 (c) Trouvez la question :

1. Non, je serai en retard.
2. Jonina et Jérémiah reviennent de Londres.
3. Jerusha pensait toujours à sa ville natale.
4. Elles n'iront pas voir le film à cause de la pluie.
5. Les feuilles des arbres sont jaunes.
6. Je suis allée faire les courses avec Julien.
7. Johanna est née le 5 octobre 2022.
8. Je révise mes leçons pour réussir mes examens.

6. Reliez avec les pronoms relatifs composés :

1. Cette jeune femme avait rencontré l'année dernière l'un de nos amis. Elle vient de se fiancer avec lui.
2. C'est un climat trop rude. Tu n'es pas prêt pour ce climat.
3. Voici la route pittoresque. Je passe par cette route chaque matin.
4. Voilà les médicaments. Il faut faire attention à ces médicaments.
5. Cette solution présente des avantages. À côté de ces avantages, les inconvénients paraissent négligeables.
6. Les deux vieilles dames n'ont pas cessé de bavarder tout le voyage. J'étais assis en face d'elles. L'arbre est haut. Nous jouons sous l'arbre.
7. Mes collègues m'attendent près du casino. De jolies serveuses travaillent dans ce casino.
8. Je te conseille d'utiliser ces livres. J'ai rédigé ma thèse à partir de ces livres.
9. Je suis la procédure du professeur. Il faut faire des phrases simples selon cette procédure.
10. As-tu lu les articles ? Je fais référence aux articles.
11. J'ai rapporté les outils. Mon cousin a travaillé avec les outils dernièrement.
12. J'aime cette femme. Je me suis battu durant de nombreuses années pour cette femme.

7. Remplacez les noms soulignés par les pronoms personnels:

1. Elle prend du sucre sur la table.
2. Elle vendra tous ses meubles à ses voisins.
3. Le policier remet les papiers au conducteur fautif.
4. Il y a une douzaine d'œufs dans le frigo.
5. Je trouve de vieux livres dans la bibliothèque.
6. La fille du sorcier a parfois des idées bizarres.
7. Jonina et Jérémiah vont au marché avec leur mère.

SECTION- D (Culture et Civilisation) **10marks**

8. Répondez aux questions :

1. Quel examen passe-t-il pour entrer dans l'université en Inde et à quel âge ?
2. Quelles sont les responsabilités d'une secrétaire ?
3. Pourquoi va-t-on à la bibliothèque ??
4. Que fait un journaliste pendant un sondage ?
5. Que doit-on faire quand on est au chômage ?
6. Comment définissez-vous le théâtre ?

9. Complétez à l'aide des mots donnés ci-dessous :

[Auto plus /le chômeur /le recyclage/ le Panchatantra / M. Emmanuel Macron/Robert de Sorbon / Vincent Van Gogh]

1. _____est le portrait de l'artiste qui a été fait par lui-même.
2. _____est le Président français.
3. Le savant Vishnu Sharma a réuni _____.
4. _____est à réduire, réutiliser et recycler.
5. _____est celui qui n'a pas de travail.
6. L'Université Paris-Sorbonne a été créée par _____.
7. _____est un magasin français.

B. Écrivez vrai ou faux :

1. Le CV montre le parcours académique et l'expérience professionnelle.
2. Le C.R.O.U.S est au service de la vie étudiante.
3. Il faut faire de la méditation pour affliger du stress.
4. La bibliothèque nationale en Inde se trouve à Delhi.
5. On va à l'opéra pour voir un spectacle.
6. Le film « Maman, j'ai raté l'avion » est en Version Originale.
7. Si l'on ne dort pas bien, on est content.

दिल्ली पब्लिक स्कूल बुलंदशहर

अभ्यास-प्रपत्र (2025-2026)

विषय: - संस्कृत

पूर्णाङ्का:-50

कक्षा - दशमी

सामान्यनिर्देशा :- (1) सर्वेषां प्रश्नानाम् उत्तराणि लेखनीयानि ।

(2) अस्मिन् अभ्यास-प्रपत्रे दशप्रश्नाः सन्ति ।

(3) सर्वेषाम् प्रश्नानाम् उत्तराणि संस्कृतेन लेखनीयानि

प्रश्नः1-अधोलिखितं गद्यांशं पठित्वा प्रदत्तप्रश्नानाम् उत्तराणि संस्कृतेन लिखत- **(10)**

विमानयात्रा सुखावहा' इति जनैः कथ्यते। विमानयात्रां प्रति जनेषु उत्सुकता दृश्यते। गतसप्ताहे चेन्नईनगरे भाषाशिक्षणस्य विशिष्टः कार्यक्रमः सम्पन्नः जातः। एषः कार्यक्रमः राष्ट्रिय: एव। तत्र शिक्षकेण सह दिल्लीतः चेन्नईनगरं विमानेन एव यात्रा जाता। एषः मम उड्डयनयानस्य प्रथमः अनुभवः आसीत्। विमानपत्तन-प्रवेशसमये किञ्चिद् औपचारिकं सुरक्षापरीक्षणं जातम। यदा विमानस्य उड्डयनकालः जातः तदा विमानपचारिका यात्रिणः सुरक्षानियमानां विषये अकथयत्। स्ते यात्रिणः तान् सुरक्षानियमान् ज्ञात्वा सावधानाः सञ्जाताः। अल्पकालेन एव विमानम् आकाशे उड्डीयमानम् आसीत् । परिचारिका सस्मितं मधुरवचसा यात्रिभ्यः भोजनं प्रदत्तवती। परिचारिकायाः व्यवहारः अपि अतीव विनम्र आसीत्। अन्ततः विमानम् शीघ्रमेव चेत्रईनगरं प्राप्तवान्। विमानाद् अवतीर्य इष्टस्थानं प्राप्तवन्तौ। एषा विमानयात्रा अनुभवेन सह चिरस्मरणीया जाता। **(सी.बी.एस.ई. 2024)**

I एकपदेन उत्तरत।

(i) काम् प्रति जनेषु उत्सुकता दृश्यते?

(ii) दिल्लीतः केन सह चेन्नईनगरं प्रति विमानयात्रा जाता?

II पूर्णवाक्येन उत्तरत।

(i) विमानपत्तन प्रवेशसमये किं जातम् ?

(ii) गतसप्ताहे चेन्नईनगरे कीदृशः कार्यक्रमः सम्पन्नो जातः?

III अनुच्छेदस्य कृते उचितं शीर्षकं लिखत ।

IV यथानिर्देशम् उत्तरत।

(i) 'अकथयत्' इति क्रियापदस्य कर्तृपदं किं भवेत् ?

(क) अहम् (ख) परिचारिका (ग) शिक्षकेण (घ) सस्मितम्

(ii) 'चिरस्मरणीया' इति विशेषणपदस्य विशेष्यपदं किम्?

(क) अनुभवेन (ख) विमानयात्रा (ग) एषा (घ) जाता

(iii) 'गगने' इति पदस्य पर्यायपदं किं प्रयुक्तम्?

(क) अल्पकालेन (ख) अनुभवेन (ग) आकाशे (घ) नगरे

प्रश्नः-2 भवतः नाम तनिष्कः। भवतः विद्यालये संस्कृतनाटकस्य मञ्चनम् अभवत्। तदर्थं मित्रं दीपकम् प्रति लिखितं पत्रं मञ्जूषातः पदानां सहायतया पूरयित्वा लिखत-

आदर्शविद्यालयः,

(i) ----------

दिनाङ्कः----------

प्रियमित्र (ii)- ----------

(iii) ----------
अत्र सर्वगतं कुशलम्। आशासे त्वम् अपि कुशली। यथा त्वं जानासि गत सप्ताहे मम विद्यालये संस्कृत-उत्सवः सम्पन्नः। अस्मिन् उत्सवे संस्कृतपरिषदः (iv) ---------- पाठ्यपुस्तकस्य 'कवयामि वयामि यामि' इति नाटकस्य (v) ----------अकुर्वन्। तस्मिन् नाटके मया 'भोजस्य' अभिनयः कृतः। कुविन्दस्य अभिनयं मम मित्रं प्राञ्जलः अकरोत्। तस्य मुखात् श्लोकगायनं (vi) ----------सर्वेऽपि उपस्थिताः दर्शकाः भावविभोराः जाताः करतलध्वनिभिः च तस्य उत्साहवर्धनम् (vii)----------।कार्यक्रमस्य अन्तेऽपि मुख्यातिथिमहोदयेन संस्कृतनाटकस्य भूरि भूरि (viii) ---------- कृता। वस्तुतः अयम् उत्सवः मनोरञ्जकं ज्ञानवर्धकं च आसीत्। तव विद्यालये संस्कृतोत्सवः कदा भविष्यति इति अवश्यं सूचय। मातुपितृचरणेषु (ix) ---------- प्रणामाः।
तव मित्रम्
(x) ----------

मञ्जूषा- (प्रशंसा, कृतवन्तः, श्रुत्वा, दिल्लीतः, मम, तनिष्कः, दीपक!, छात्राः, सस्नेहं नमः, मञ्चनम्)

(सी बी एस ई आदर्श प्रश्न पत्र 2025)

प्रश्न: 3- अधोलिखितं संवादं मञ्जूषाप्रदत्तवाक्यैः पूरयत – **(5)**

पुत्रः- तात ! प्रणमामि ।
पिता (i)----------
पुत्रः- आम् तात ! सर्वं कुशलम् अस्ति।
पिता - उत्तमम्। विद्यालये तव अध्ययनं कथं प्रचलति, कापि समस्या तु नास्तिः?
पुत्रः- न, कापि समस्या नास्ति परन्तु एकत्र भवताम् अनुमतिं सहाय्यं च इच्छामि ।
पिता - कस्मिन् सन्दर्भे, निस्सङ्कोचं वद।
पुत्रः- श्वः मम प्रियशिक्षकस्य जन्मोत्सवः भविष्यति । अहम् (ii)----------
पिता - शिक्षक तु सदैव पूज्यः। तस्मिन् सन्दर्भे सङ्कोचः न कर्तव्यः।(iii)- ----------
पुत्रः- अहं पूर्वमेव पृष्टवान्, कार्यक्रमः सायं सप्तवादने भविष्यति। केवलं भवतां समयस्य आशङ्का आसीत्।
पिता - चतुर। सर्व निश्चित्य मां पृच्छसि।(iv)----------
पुत्रः- तात! किमपि उपायनं स्वीकरणीयम् अस्ति।
पिता - अस्तु ! मात्रा सह आपणं गत्वा उत्तमम् उपायनं स्वीकुरु।
पुत्रः-(v)----------

मञ्जूषा-

(क) अस्तु, अहं कार्यालयात् समयेन आगमिष्यामि।
(ख) अस्तु, धन्यवादः।
(ग) शिक्षकं पृच्छ, कदा कार्यक्रमः भविष्यतिः
(घ) तत्र भवता सह गन्तुम् इच्छामि।
(ड़) चिरञ्जीव! वद सर्वं कुशलम् ? **(सी.बी.एस.ई. आदर्श-प्रश्न पत्रम् 2025)**

प्रश्न: 4- प्रदत्त-उचितैः अव्ययपदैः अधोलिखितवाक्येषु रिक्तस्थानानि पूरयत- **(5)**

मञ्जूषा= उच्चैः, च, नूनम्, इव, यथा

(i)- ----------मधुरभाषिणी वाणी प्रह्लादयदि न तथा चन्दनरसः।

(ii) ----------तव पुत्राः वीरगतिम् एव प्राप्ताः।

(iii) दुष्टबुद्धिः दग्धमानसः सकरुणम् ----------अक्रन्दत्।

(iv) मञ्चे पर्यटनाधिकारी अध्यापकाः----------उपविष्टाः सन्ति।

(v) मनसः निग्रहं वायोः ----------सुदुष्करम्।

प्रश्न-:5 अधोलिखितवाक्येषु रेखाङ्कितपदेषु सन्धिं सन्धिच्छेदं वा कुरुत- **(5)**

(i) वानर: सर्वत्र **वृक्षेऽपि** कुर्दति।

(ii) पर्वतीयं वातावरणं **स्व+छं** भवति।

(iii) मम **जनकस्तु** प्रतिदिनम् गीताया: पाठं करोति।

(iv) श्यामस्य हृदयं **नि:+छलम्** अस्ति ।

(v) **भवदीश्वर:** कुत्र न विराजते

प्रश्न-:6 अधोलिखितवाक्येषु रेखाङ्कितपदानां समासं विग्रहं वा प्रदत्तविकल्पेभ्यः चित्वा लिखत – **(5)**

(i) **अज्ञानी** कदापि कुत्रापि न शोभते।

(क) अनज्ञानी (ख) न जानी (ग) न ज्ञानी (घ) अज्ञानीन्

(ii) स: **वेदान् पठति इति** बालक: अस्ति।

(क) वेदपाठक (ख) वेदपाठको (ग) वेदपाठी (घ) वेदपाठ

(iii) **ज्ञानवृद्धः** पूज्यः भवति ।

(क) ज्ञाने वृद्धः (ख) ज्ञानस्य वृद्धः (ग) ज्ञानात् वृद्धः (घ) ज्ञानम् वृद्धः

(iv) मार्गे एकं **निर्जनम्** वनम् आसीत् ।

(क) वनस्य समीपे (ख) वनेन सहितम् (ग) जनानाम् अभावः (घ) जनम् अनतिक्रम्य

(v) वने **पशव: च पक्षिण:च** निवसन्ति ।

(क) पशव: पक्षिण: (ख) पशुपक्षिण: (ग) पशुपक्षी (घ) पशुपक्षिनो

प्रश्न:7 अधोलिखितं गद्यांशं पठित्वा प्रदत्तप्रश्नानाम् उत्तराणि संस्कृतेन लिखत- **(5)**

बकः- (प्रविश्य, स्वपक्षौ अवधूय) कथं माम् अपि अधिक्षिपसि। किं ते महत्त्वम्? वर्षर्तौ तु मानसं पलायसे । अहम् एव अत्र वृष्टेः अभिनन्दनं करोमि। कीदृशी तव मैत्री? आपत्काले सरांसि त्यक्त्वा दूरं व्रजसि । वस्तुतः अहमेव शीतले जले बहुकालपर्यन्तम् अविचलं ध्यानमग्नः स्थितप्रज्ञ' इव तिष्ठामि। दुग्धधवला मे पक्षाः । न जाने कथं माम् अपरिगणयन्तः जना चित्रवर्णं अहिभुजं मयूरं 'राष्ट्र पक्षी' इति मन्यते। अहमेव योग्यः-

मयूरः - (प्रविश्य साट्टहासम्) सत्यं सत्यम् । अहमेव राष्ट्रपक्षी। को न जानाति तव ध्यानावस्थाम्? मौनं धृत्वा "वराकान् मीनान् छलेन अधिगृह्य, क्रूरतया भक्षयसि । धिक् त्वाम् ! अवमानितं खलु सर्वं पक्षिकुलं त्वया ।

काकः- रे सर्पभक्षक ! नर्तनात् अन्यत् किम् अपरं जानासि ?

मयूरः- श्रूयतां श्रूयताम् ! मम नृत्यं तु प्रकृतेः आराधना। पश्य ! चारुवर्तुलचन्द्रिकाशोभितानां मम पिच्छानाम् अपूर्वं सौन्दर्यम्। मम केकारवं श्रुत्वा कोकिलः अपि लज्जते। मम शिरसि राजमुकुटमिव शिखां स्थापयता विधात्रा एव अहं पक्षिराजः कृतः ।

I एकपदेन उत्तरत -

(i) बकः कस्याः अभिनन्दनं करोति ?

(ii) राजहंसः कुत्र पलायते?

II पूर्णवाक्येन उत्तरत-

(i) बकः शीतले जले बहुकालपर्यन्तं कथं तिष्ठति?

(ii) मयूरः प्रविश्य किं वदति?

III यथानिर्देशम् उत्तरत-

(i) वाक्ये " लज्जते " इति क्रियायाः कर्तृपदं किम् ?

(ii) गद्यांशे बकस्य विशेषणपदानि कानि?

प्रश्नः-8 रेखाङ्कितपदानि आधृत्य प्रश्ननिर्माणं कुरुत – **(5)**

(i) **राज्ञः** दानशीलताम् आकर्ण्य देशान्तरेभ्योऽपि जनाः तं देशम् आयान्ति स्म ।

(ii) वयं **राजभवनं** परित्यज्य वनं गच्छामः ।।

(iii) एकस्य चक्षुष: **दानम्** इच्छामि।

(iv) मम शिरसि राजमुकुटमिव शिखां स्थापयता **विधात्रा** एव अहं पक्षिराजः कृतः ।

(v) **सूपकारेण** अर्धज्वलितकाष्ठेन ताडित:।

प्रश्न:9 अधोलिखित- पद्यांशस्य अन्वयं मञ्जूषातः उचितं पदं चित्वा पूरयत - **(2)**

कलहान्तानि हर्म्याणि कुवाक्यान्तं च सौहृदम् ।
कुराजान्तानि राष्ट्राणि कुकर्मान्तं यशो नृणाम् ॥

अन्वयः - हर्म्याणि (i)---------- अन्तानि (भवन्ति) सौहृदम् च कुवाक्य (ii)---------- (भवति) ।(iii)---------- कुराज-अन्तानि (भवन्ति) नृणाम् (iv)---------- (च) कुकर्मान्तं (भवति)।

मञ्जूषा=अन्तम्, राष्ट्राणि, यशः, कलह

प्रश्न:10 अधोलिखितेषु वाक्येषु रेखाङ्कितपदस्य प्रसङ्गानुकूलं समुचितार्थं चिनुत - **(3)**

(i) मेषेण सह **पाचकानाम्** कलहः वानराणां विनाशकारकः भविष्यति ।

(क) राज्ञाम् (ख) सूपकाराणाम् (ग) वैद्यानाम् (घ) अश्वानाम्

(ii) बकः मीनान् छलेन **अधिगृह्य** क्रूरतया भक्षयति ।

(क) गृहीत्वा (ख) खादित्वा (ग) त्यक्त्य (घ) त्यक्त्वा

(iii) प्राज्ञः कलहान्तानि **हर्म्याणि** परिवर्जयेत् ।

(क) भवनानि (ख) राजभवनानि (ग) विद्याभवनानि (घ) पुष्पाणि

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DELHI PUBLIC SCHOOL BULANDSHAHR

Holiday Homework Practice Sheet

MID- SEMESTER EXAMINATION (session-2025-26)

Subject- German **Class X**

Frage1: Lies den Text. Löse die Aufgaben zu dem Text.

TextA: ***Dünn und schön?***

Wenn ich heute meine Fotos von damals sehe, denke ich: „Wahnsinn, wie dünn ich war." Das war vor zwei Jahren …Ich bin magersüchtig geworden, als ich 14 war. Und es hat so einfach angefangen. Zuerst wollte ich nur einbisschen abnehmen, einpaar Kilorunter. Dann hatte ich ein Erfolgs erlebnis. Ich hatte keinen Hunger mehr, also habe ich fast gar nichts gegessen.Ich habe kaum gemerkt, wie schnell ich Gewicht verloren habe. Ich habe unter 32 Kilo gewogen und oft ist mir beim Aufstehen schwindlig geworden. Die anderen haben immer gesagt:„ Du kannst umkippen. "Aber ich habe es nicht geglaubt. Natürlich war mir immer kalt, aber das habe ich nicht gemerkt, weil ich mich daran gewöhnt habe. Bis heute weiß ich eigentlich nicht, was der Grund für meine Krankheit war. Zuerst war für mich nur das Gewicht wichtig. Doch dann war auch das nicht mehr so wichtig …

Es war wie ein Zwang. Später, so denke ich heute, ist noch was dazu gekommen: Ich wollte nicht erwachsen werden. Nur meine Schwester hat die Gefahrer kannt. Ich selbst habe lange nicht eingesehen, dass ich krank war. Am Ende bin ich mit meinen Eltern zu einem Psychologen gegangen und habe eine Therapie gemacht. Zwei Jahre bin ich hingegangen. Gott sei Dank ist es jetzt vorbei.

Beantworte die Fragen:

I. Was hat Julia mit 14 Jahren gemacht?
II. Welche Krankheit hatte Julia?
III. Was waren die Symptome von Julias Krankheit?
IV. Was hat sie gegen die Krankheit gemacht?
V. Wie lange hat die Therapie gedauert?

Frage2: Schreib einen Dialog :

Karan ist zu Besuch bei seiner Großmutter. Sie fragt ihn nach seiner Schule und seinen Freunden. Schreib einen Dialog zwischen Karan und seiner Großmutter. Schreib den Dialog zu den folgenden Punkten:

a. Begrüßung

b. Lieblingslehrer

c. Beschreib einen neuen Schüler/eine neue Schülerin, der/die aus Deutschland kommt.

d. Benutze Adjektive diese Personen zu beschreiben, z.B.- streng, hilfsbereit, humorvoll

Frage3: Ergänze Präteritum!

a) Ich _____ gestern ein spannendes Buch. (lesen)
b) Sie _____ eine E-Mail an ihren Lehrer. (schreiben)
c) Wir _____ nach dem Essen spazieren. (gehen)
d) Brigitte _____ (bringen) es mir aus dem Zug.
e) Eine nette Frau aus dem Zug _____ (erinnern) mich an mein Gepäck.
f) Er _____ das Fenster offen. (lassen)
g) Sie _____ jeden Morgen zur Schule. (laufen)

h) Ich _____ gestern einen interessanten Film. (sehen)
i) Der Junge _____ nach seiner Mutter. (rufen)
j) Er _____ mir ein Geschenk. (geben)
k) Sie _____ gestern spät nach Hause. (kommen)
l) Wir _____ im See. (schwimmen)
m) Das Kind _____ tief und fest. (schlafen)

Frage4: Ergänze Adjektivending!

1.) Es liegt Schnee auf dem _____ Berg und regnet auf dem _____ Hügel. [hoch / klein]

2.) Eine Reise ist ein _____ Geschenk für _____ Menschen. [schön / lieb]

3.) Deutschland ist ein _____ Land mit _____ Einwohnern. [groß / viel]

4.) Die eine Wurst gebe ich dem ___ Hund, die andere bekommt der ____ Hund. [klein / groß]

5.) Fährst du mit dem _____ Auto deines _____ Bruders? [schnell / groß]

6.) Wie heißt das _____ Lied? Das ist das _____ Lied von Elton John. [schön / neu]

7.) Das _____ Mädchen spielt mit seiner _____ Freundin. [jung / neu]

8.) Berlin ist eine _____ Stadt und eine _____ Stadt. [schön / groß]

9.) Meine Tochter ist ein _____ Mädchen und hat einen _____ Freund. [nett / nett]

10.) Ich wünsche euch einen _____ Tag und eine _____ Nacht. [schön / gut]

11.) Hattest du eine _____ Reise mit deinem _____ Freund? [schön / neu]

12.) Mein Hund ist _____ (jung).

13.) Das Radio spielt _____ (alt) und _____ (schön) Musik.

14.) Der _____ (alt) Mann steht neben der _____ (breit) Straße.

15.) Es ist ein _____ (kalt) Tag.

16.) Hier steht das _____ (neu) Auto meines Onkels.

17.) Man muss die (richtig) ____ Antwort ankreuzen.

18.) Ich habe die Prüfung mit einer (gut) _____ Note bestanden.

19.) Die Studentinnen suchen ein (billig) _____ Zimmer.

20.) Familie Weber wohnt in einem Haus mit einem (groß)_____ Garten.

21.) Gestern war ich mit meiner Freundin Lea in der Stadt. Wir haben eine (schick) _____ Hose gekauft.

22.) Der _____ (alt) Mann steht neben der _____ (breit) Straße.

23.) Es ist ein _____ (kalt) Tag.

24.) Hier steht das _____ (neu) Auto meines Onkels.

25.) Bitte bringen Sie mir ein _____ (kalt) Getränk und eine _____ (heiß) Suppe.

26.) Dort steht eine kleine Frau mit einem _____ (groß) Mann.

27.) Mein langweiliger Lehrer fährt ein _____ (rot) Auto.

Frage5: Ergänze richtigen präpositionen!

1) (nach/vor/zwischen)_____ dem Mittagessen und dem Abendessen putze ich das Auto.

2) (während/zwischen/gegen)_____ des Frühstücks, klingelt das Telefon.

3) Ich werde heute (nach/bis/am)_____ zum Abend arbeiten.

4) Wir fahren (nach/zum/für)_____ sieben Tage in den Urlaub.

5) Wann und _____ (wenn/am/um) wie viel Uhr triffst treffen wir uns?

6) _____(am/von/ab) morgen werde ich wieder kürzer arbeiten.

7) Ich bin in der Schule _____ (im/nach/bis) 12 Uhr.

8) Wahrscheinlich werden wir _____(im/gegen/am) 15 Uhr ankommen.

9) Wir treffen uns _____ (um/am/in) Dienstag _____(am/um/zum) 12 Uhr.

10) (um/zwischen/am) _____ 12 und 13 Uhr haben wir Mittagspause. Davor oder danach können Sie kommen.

11) Der Wecker klingelt _____ (am/um/im) 8 Uhr.

12) (am/um/zum)_____ 24. Dezember ist Weihnachten.

13) Wir wohnen in diesem Haus _____ (nach/seit/von) drei Jahren.

14) Ich spiele Fußball _____ (im/von/seit) zwei Jahren.

15) Das Geschäft ist _____(am/von/bis) morgens _____ (am/von/bis) abends geöffnet.

16) (nach/vor/zwischen)_____ dem Mittagessen und dem Abendessen putze ich das Auto.

17) Ich hatte einen Unfall. Ich bin _____ Krankenhaus gefahren. [zum/am/nach]

18) Manchmal gehe ich mit Kollegen _____ Tiergarten. [ins/ im /in den]

19) Wir gehen sehr oft zu Fuß _____ die Stadt. [bis/um/durch]

20) Karl kommt schnell _____der Wohnung. [aus/in/zu]

21) Gehst du mit ____ Kino ? – Ach, ich habe keine Lust. (im/beim/ins)

22) Wo warst du am Montag ? – Ich war ____ Parul. (in/bei/zu)

23) Wohin gehst du ? _____ Apotheke ? – (zur/bei/mit)

24) Der Mann möchte _____ Flughafen. [ins/zum/am]

DELHI PUBLIC SCHOOLBULANDSHAHR

Worksheet-Quadratic Equations

Subject: Mathematics (041)

Class: X

	Section A	
1	The value(s) of k for which the quadratic equation $3x^2 - kx + 3 = 0$ has equal roots, is (are) a) - 6 b) ± 6 c) 6 d) 9	[1]
2	Which of the following equations has two distinct real roots? a) $5x^2 - 3x + 1 = 0$ b) $x^2 + x + 5 = 0$ c) $x^2 + x - 5 = 0$ d) $4x^2 - 3x + 1 = 0$	[1]
3	If the equation $9x^2 + 6kx + 4 = 0$ has equal roots then k = ? a) 2 or 0 b) 0 only c) - 2 or 0 d) 2 or - 2	[1]
4	If one root of the equation $3x^2 - 10x + 3 = 0$ is $\frac{1}{3}$ then the other root is a) $\frac{1}{3}$ b) $\frac{-1}{3}$ c) 3 d) - 3	[1]
5	If $x^2 + k(4x + k - 1) + 2 = 0$ has equal roots then k = a) $-\frac{2}{3}, 1$ b) $-\frac{3}{2}, -\frac{1}{3}$ c) $\frac{2}{3}$, - 1 d) $\frac{3}{2}, \frac{1}{3}$	[1]
6	If I had walked 1 km per hour faster, I would have taken 10 minutes less to walk 2 km. Then the rate of my walking is a) 6 km /hr b) 3 km/hr c) 8 km/hr d) 4 km/hr	[1]
7	The roots of the equation $3\sqrt{x} + 5(x)^{-\frac{1}{2}} = \sqrt{2}$ can be found by solving _____. a) $9x^2 + 30x + 25 = 0$ b) $16x^2 + 22x - 30 = 0$ c) $9x^2 + 28x + 25 = 0$ d) $9x^2 + 28x - 25 = 0$	[1]
8	If the roots of equation $ax^2 + bx + c = 0, a \neq 0$ are real and equal, then which of the following relation is true? a) $c = \frac{b^2}{a}$ b) $ac = \frac{b^2}{4}$ c) $a = \frac{b^2}{c}$ d) $b^2 = ac$	[1]

9	The angry Arjun carried some arrows for fighting with Bheeshma. With half the arrows, he cut down the arrows thrown by Bheeshma on him and with six other arrows he killed the rath driver of Bheeshma. With one arrow each, he knocked down respectively the rath, flag and bow of Bheeshma. Finally, with one more than four times the square root of arrows, he laid Bheeshma unconscious on an arrow bed. The total number of arrows that Arjun had, is a) 100 b) 120 c) 80 d) 96	**[1]**
10	If the equation $x^2 - kx + 1 = 0$ has no real roots then a) $-2 < k < 2$ b) $k < -2$ c) $k > 2$ d) $k > -2$	**[1]**
11	$4x^2 - 20x + 25 = 0$ have a) No Real roots b) Real roots c) Real and Equal roots d) Real and Distinct roots	**[1]**
12	If $y = 1$ is one of the solutions of the quadratic equation $py^2 + py + 3 = 0$, then the value of p is: a) - 3 b) - 2 c) $-\frac{3}{2}$ d) 2	**[1]**
13	If one root of the equation $2x^2 + ax + 6 = 0$ is 2 then a = ? a) 7 b) $\frac{7}{2}$ c) $\frac{-7}{2}$ d) - 7	**[1]**
14	The roots of the quadratic equation $x^2 + px - q = 0$ are equal, if: a) $p^2 = -4q$ b) $p^2 = 2q$ c) $p^2 = -2q$ d) $p^2 = 4q$	**[1]**
15	A quadratic equation $ax^2 + bx + c = 0$ has real and equal roots, if a) $b^2 - 4ac > 0$ b) $b^2 - 4ac = 0$ c) $b^2 - 4ac < 0$ d) $b^2 - 4ac \neq 0$	**[1]**
16	The roots of the equation $2x^2 - 6x + 7 = 0$ are a) real, unequal and irrational b) imaginary c) real, unequal and rational d) real and equal	**[1]**
17	If a and b can take values 1, 2, 3, 4. Then the number of the equations of the form $ax^2 + bx + 1 = 0$ having real roots is a) 12 b) 6 c) 7 d) 10	**[1]**
18	A two digit number is such that the product of the digits is 12. When 36 is added to the number then the digits interchange their places. The number is a) 26 b) 43 c) 34 d) 62	**[1]**

19	Rohan's mother is 26 years older than him. The product of their ages 3 years from now will be 360, then Rohan's present age is a) 8 years b) 10 years c) 6 years d) 7 years	**[1]**
20	If one root of the equation $2x^2 + kx + 4 = 0$ is 2, then the other root is a) 1 b) - 1 c) 6 d) - 6	**[1]**
21	If the equation $x^2 + 5kx + 16 = 0$ has no real roots then a) $k > \frac{8}{5}$ b) $k < \frac{-8}{5}$ c) $\frac{-8}{5} < k < \frac{8}{5}$ d) $k > \frac{-8}{5}$	**[1]**
22	The roots of the quadratic equation $x^2 + 3x + 2 = 0$, are: a) 1, - 2 b) - 1, - 2 c) - 1, 2 d) 1, 2	**[1]**
23	The roots of the quadratic equation $x^2 - 4 = 0$ is/are: a) 2 only b) - 2, 2 c) - 4, 4 d) 4 only	**[1]**
24	The value of λ for which $(x^2 + 4x + \lambda)$ is a perfect square, is a) 16 b) 1 c) 4 d) 9	**[1]**
25	The roots of the quadratic equation $x^2 - 0.04 = 0$ are: a) 2 b) ± 0.2 c) 0.4 d) ± 0.02	**[1]**

	Section-B	
26	**Assertion (A):** The equation $8x^2 + 3kx + 2 = 0$ has equal roots then the value of k is $\pm\frac{8}{3}$ **Reason (R):** The equation $ax^2 + bx + c = 0$ has equal roots if $D = b^2 - 4ac = 0$ a) Both A and R are true and R is the correct explanation of A. b) Both A and R are true but R is not the correct explanation of A. c) A is true but R is false. d) A is false but R is true.	**[1]**
27	**Assertion (A):** If one root of the quadratic equation $4x^2 - 10x + (k - 4) = 0$ is reciprocal of the other, then value of k is 8.	**[1]**

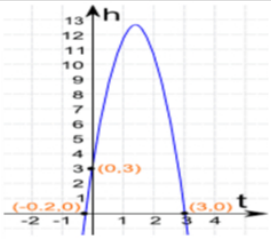
	Reason (R): Roots of the quadratic equation $x^2 - x + 1 = 0$ are real. a) Both A and R are true and R is the correct explanation of A. b) Both A and R are true but R is not the correct explanation of A. c) A is true but R is false. d) A is false but R is true.	
28	**Assertion (A):** If roots of the equation $x^2 - bx + c = 0$ are two consecutive integers, then $b^2 - 4c = 1$ **Reason (R):** If a, b, c are odd integer then the roots of the equation $4abc\,x^2 + (b^2 - 4ac)x - b = 0$ are real and distinct. a) Both A and R are true and R is the correct explanation of A. b) Both A and R are true but R is not the correct explanation of A. c) A is true but R is false. d) A is false but R is true.	**[1]**
29	**Assertion (A):** If $5 + \sqrt{7}$ is a root of a quadratic equation with rational co - efficients, then its other root is $5 - \sqrt{7}$. **Reason (R):** Surd roots of a quadratic equation with rational co - efficients occur in conjugate pairs. a) Both A and R are true and R is the correct explanation of A. b) Both A and R are true but R is not the correct explanation of A. c) A is true but R is false. d) A is false but R is true.	**[1]**
30	**Assertion (A):** The value of k = 2, if one root of the quadratic equation $6x^2 - x - k = 0$ is $\frac{2}{3}$ **Reason (R):** The quadratic equation $ax^2 + bx + c = 0$, $a \leq 0$ has two roots. a) Both A and R are true and R is the correct explanation of A. b) Both A and R are true but R is not the correct explanation of A. c) A is true but R is false. d) A is false but R is true.	**[1]**
31	**Assertion (A):** The equation $9x^2 + 3kx + 4 = 0$ has equal roots for $k = \pm 4$	**[1]**

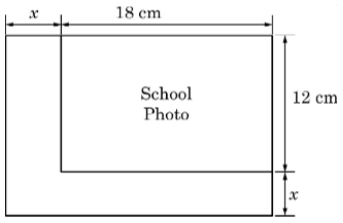
	Reason (R): If discriminant Dof a quadratic equation is equal to zero then the roots of the equation are real and equal. a) Both A and R are true and R is the correct explanation of A. b) Both A and R are true but R is not the correct explanation of A. c) A is true but R is false. d) A is false but R is true.	
32	**Assertion (A):** $(2x - 1)^2 - 4x^2 + 5 = 0$ is not a quadraticequation. **Reason (R):** x = 0, 3 are the roots of the equation $2x^2 - 6x = 0$ a) Both A and R are true and R is the correct explanation of A. b) Both A and R are true but R is not the correct explanation of A. c) A is true but R is false. d) A is false but R is true.	**[1]**
33	**Assertion (A):** $4x^2 - 12x + 9 = 0$has repeated roots. **Reason (R):** The quadratic equation $ax^2 + bx + c = 0$have repeated roots if discriminant D > 0. a) Both A and R are true and R is the correct explanation of A. b) Both A and R are true but R is not the correct explanation of A. c) A is true but R is false. d) A is false but R is true.	**[1]**
34	**Assertion (A):** Sum and product of roots of $2x^2 - 3x + 5 = 0$ are $\frac{3}{2}$ and $\frac{5}{2}$ respectively. **Reason (R):** If α and β are the roots of $ax^2 + bx + c = 0$, $a \neq 0$, then sum of roots $= \alpha + \beta = -\frac{b}{a}$ and product of roots $= \alpha\beta = \frac{c}{a}$ a) Both A and R are true and R is the correct explanation of A. b) Both A and R are true but R is not the correct explanation of A. c) A is true but R is false. d) A is false but R is true.	**[1]**
35	**Assertion (A):** The equation $x^2 + 3x + 1 = (x - 2)^2$ is a quadratic equation. **Reason (R):** Any equation of the form $ax^2 + bx + c = 0$where $a \neq 0$, is called a	**[1]**

	quadratic equation. a) Both A and R are true and R is the correct explanation of A. b) Both A and R are true but R is not the correct explanation of A. c) A is true but R is false. d) A is false but R is true.	
36	In a class test Raveena got a total of 30 mark in English and Mathematics. Had she got 2 more marks in Mathematics and 3 marks less in English then the product of her marks obtained would have been 210. Find the individual marks obtained in two subjects.38319	**[2]**
37	A two - digit number is four times the sum of its digits and twice the product of its digits. Find the number.	**[2]**
38	Solve the quadratic equation by factorization: $ax^2 + (4a^2 - 3b)x - 12ab = 0$	**[2]**
39	Ram takes 6 days less than Bhagat to finish a piece of work. If both of them together can finish the work in 4 days, in how many days Bhagat alone can finish the work ?	**[2]**
40	Write the number of real roots of the equation $x^2 + 3\|x\| + 2 = 0$.	**[2]**
41	Using quadratic formula, find the real roots of the equation $2x^2 + 2x + 9 = 0$, if they exist.	**[2]**
42	Solve equation $\frac{2}{x^2} - \frac{5}{x} + 2 = 0$ by factorisation method.	**[2]**
43	The area of a rectangular plot is 528 m^2. The length of the plot (in metres) is one more than twice its breadth. We need to find the length and breadth of the plot.Represent the situationin the form of a quadratic equation.	**[2]**
44	Find the roots of the equation $ax^2 + a = a^2x + x$	**[2]**
45	Find the value of k for which the roots are real and equal of equation: $kx^2 - 2\sqrt{5}x + 4 = 0$	**[2]**
46	Find the values of k for which the equation $x^2 + 5kx + 16 = 0$ has no real roots.	**[2]**
47	Solve for x:$2x^2 + \frac{7}{2}x + \frac{3}{4} = 0$	**[2]**
48	Solve the quadratic equation by factorization: $4\sqrt{3}x^2 + 5x - 2\sqrt{3} = 0$.	**[2]**
49	Find the roots of the quadratic equation$\sqrt{2}x^2 + 7x + 5\sqrt{2} = 0$ by factorization.	**[2]**
50	The length of a rectangular field is 30 m more than its breadth and the diagonal is 60 m more than its breadth. Find the dimensions of the field.	**[2]**
51	Solve:$\sqrt{3}x^2 + 10x - 8\sqrt{3} = 0$	**[3]**

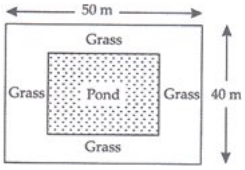
52	At t minutes past 2 pm the time needed by the minutes hand of a clock to show 3 pm was found to be 3 minutes less than $\frac{t^2}{4}$ minutes. Find t.	**[3]**
53	Solve thequadratic equations by factorization: $$\frac{x+3}{x+2}=\frac{3x-7}{2x-3}, x \neq -2, \frac{3}{2}$$	**[3]**
54	Solve:$x^2 - 2ax - (4b^2 - a^2) = 0$	**[3]**
55	If p, q, r and s are real numbers such that pr = 2(q + s), then show that at least one of the equations $x^2 + px + q = 0$ and $x^2 + rx + s = 0$ has real roots.	**[3]**
56	Solve:$\frac{1}{(a+b+x)}=\frac{1}{a}+\frac{1}{b}+\frac{1}{x}[x \neq 0, x \neq -(a+b)]$	**[3]**
57	Find roots of given quadratic equation:$p^2x^2+\left(p^2-q^2\right)x-q^2=0, p \neq 0$	**[3]**
58	The product of two successive integral multiples of 5 is 300. Determine the multiples.	**[3]**
59	Some students planned a picnic. The total budget for hiring a bus was₹ 1440. Later on, eight of these refused to go and instead paid their total share of money towards the fee of one economically weaker student of their class, and thus, the cost for each member who went for picnic, increased by ₹ 30. 1. How many students attended the picnic? 2. How much money in total was paid towards the fee? Which value is reflected in this question?	**[3]**
60	The perimeter of a right - angled triangle is 70 units and its hypotenuse is 29 units. Find the lengths of the other sides.	**[3]**
61	Sum of the areas of two squares is 260 m^2. If the difference of their perimeters is 24 m then find the sides of the two squares.	**[3]**
62	The sum of two numbers is 48 and their product is 432. Find the numbers.	**[3]**
63	Nine times the side of one square exceeds aperimeter of a second square by one metre and sixtimes the area of the second square exceeds twenty - nine times the area of the first by one square metre,Find the side of each square.	**[3]**
64	For what value of k, are the roots of the quadratic equation $kx(x - 2) + 6 = 0$ equal?	**[3]**
65	A peacock is sitting on the top of a pillar, which is 9 m high froma point 27 m away from the bottom of the pillar, a snake is comingto its hole at the base of the pillar. Seeing the snake, the peacock pounces on it. If their speeds are equal, at what distance from the whole is thesnake caught?	**[3]**
66	Determine whether the given quadratic equation have real roots and if so, find the roots $16x^2 = 24x + 1$	**[3]**
67	Solve thequadratic equation by factorization:	**[3]**

	$\frac{3}{x+1}+\frac{4}{x-1}=\frac{29}{4x-1};x\neq 1,-1,\frac{1}{4}$	
68	Find the value of k for which the roots are real and equal of equation: $kx^2 + kx + 1 = -4x^2 - x$	**[3]**
69	A two - digit number is seven times the sum of itsdigits and is also equal to 12 less than three timesthe Product of its digits. Find the number.	**[3]**
70	Solve thequadratic equation by factorization: $\frac{2x}{x-4}+\frac{2x-5}{x-3}=\frac{25}{3},x\neq 3,4$	**[3]**
71	**Read the following text carefully and answer the questions that follow:** The tradition of pottery making in India is very old. In fact, it is older than Indus Valley Civilization. The shaping and baking of clay articles has continued through the ages. The picture of a potter is shown below: A potter makes a certain number of pottery articles in a day. It was observed on a particular day the cost of production of each article(in ₹) was one more than twice the number of articles produced on that day. The total cost of production on that day was ₹ 210.  1. Taking number of articles produced on that day as x, form a quadratic equation in x. (1) 2. Find the number of articles produced and the cost of each article. (1) 3. Find the cost of production of 15 articles. (2) **OR** Find the numberof articles made by Potter in a day if the total cost of production is₹ 1575. (2)	**[4]**
72	**Read the following text carefully and answer the questions that follow:** Michael throws a ball with a speed of 14 m/s which follows the curve $= -5t^2 + 14t + 3$ where **h** represents height in meters and time **t** in seconds.	**[4]**

	 1. Find the possible values of **t** when the ball touches the ground. (1) 2. Find the maximum height attained by the ball. (1) 3. What is the vertical component of velocity at h_{max} ? (2) **OR** Find the position of ball at t = 18. (2)	
73	**Read the following text carefully and answer the questions that follow:** The angry Arjun carried some arrows for fighting with Bheeshm. With the half of the arrows, he cut down the arrows thrown by Bheeshm on him and with six other arrows, he killed the charioteer of Bheeshm. With one arrow each, he knocked down respectively the chariot, flag and the bow of Bheeshma. Finally, with one more than four times the square root of arrows, he laid Bheeshm unconscious on an arrow bed.  1. If Arjun had x arrows then by how many arrows he cut down arrows thrown by Bheeshm? (1) 2. If Arjun had x arrows then by how many arrows he laid Bheeshm unconscious on arrow bed? (1) 3. Find the total number of arrows Arjun had. (2) **OR** From a quadratic equation by the no of arrows used by Arjuna? (2)	**[4]**
74	**Read the following text carefully and answer the questions that follow:** While designing the school year book, a teacher asked the student that the length and width of a particular photo is increased by x units each to double the area of the photo. The original photo is 18 cm long and 12 cm wide. 1. Write an algebraic equation depicting the above information. (1)	**[4]**

	2. Write the corresponding quadratic equation in standard form. (1) 3. What should be the new dimensions of the enlarged photo? (2)  **OR** Can any rational value of x make the new area equal to 220 cm^2? (2)	
75	**Read the following text carefully and answer the questions that follow:** Shreya has a field with a flowerbed and grassland. The grassland is in the shape of rectangle while flowerbed is in the shape of square. The length of the grassland is found to be 3 m more than twice the length of the flowerbed. Total area of the whole land is 1260 m^2.  1. If the length of the square is x m then find the total length of the field. (1) 2. What will be the perimeter of the whole figure in terms of x? (1) 3. Find the value of x if the area of total field is 1260 m^2. (2) **OR** Find area of grassland and the flowerbed separately. (2)	**[4]**
76	**Read the following text carefully and answer the questions that follow:** A rectangular floor area can be completely tiled with 200 square tiles. If the side length of each tile is increased by 1 unit, it would take only 128 tiles to cover the floor.  1. Assuming the original length of each side of a tile be x units, make a	**[4]**

	quadratic equation from the above information. **(1)** 2. Write the corresponding quadratic equation in standard form. **(1)** 3. a. Find the value of x, the length of side of a tile by factorisation. **(2)** **OR** b. Solve the quadratic equation for x, using quadratic formula. **(2)**	
77	If x = - 2 is a root of the equation $3x^2 + 7x + p = 0$,find the value of k so that the roots of the equation $x^2 + k(4x + k - 1) + p = 0$ are equal.	**[5]**
78	A rectangular park is to be designed whose breadth is 3 m less than its length. Its area is to be 4 square metres more than the area of a park that has already been made in the shape of an isosceles triangle with its base as the breadth of the rectangular park and of altitude 12 m. Find the length and breadth of the park.	**[5]**
79	Represent the situationin the form of the quadratic equation: A train travels a distance of 480 kmat a uniform speed. If the speed had been 8 km/hr less, then it would have taken 3 hours more to cover the same distance. We need to find the speed of the train.	**[5]**
80	Determine whether the given quadratic equation have real roots and if so, find the roots $\sqrt{3}x^2 + 10x - 8\sqrt{3} = 0$	**[5]**
81	A truck covers a distance of 150 km at a certain average speed and then covers another 200 km at an average speed which is 20 km per hour more than the first speed. If the truck covers the total distance in 5 hours, then find the first speed of the truck.	**[5]**
82	A piece of cloth costs 200 Rupees . If the piece was 5 m longer and each metre of cloth costs 2 Rupees less, the cost of the piece would have remain unchanged. How long is the piece and what is the original rate per metre?	**[5]**
83	In a flight of 2800 km, an aircraft was slowed down due to bad weather. Its average speed is reduced by 100 km/h and by doing so, the time of flight is increased by 30 minutes. Find the original duration of the flight.	**[5]**
84	A train takes 2 hours less for a journey of 300 km if its speed is increased by 5 km/hr from its usual speed. Find the usual speed of the train.	**[5]**
85	If the price of a book is reduced by₹ 5, a person can buy 5 more books for ₹ 300. Find the original list price of the book.	**[5]**
86	Swati can row her boat at a speed of 5 km/hr in still water. If it takes her 1 hour more to row the boat 5.25 km upstream than to return downstream, find the speed of the stream.	**[5]**
87	A girl is twice as old as her sister. Four years hence, the product of their ages (in	**[5]**

	years) will be 160. Find their present ages	
88	The area of right angled triangle is 480 cm ^{2}. If the base of triangle is 8 cm more than twice the height (altitude) of the triangle, then find the sides of the triangle.	**[5]**
89	The hypotenuse of a right triangle is $3\sqrt{10}$ cm. If the smaller leg is tripled and the longer leg doubled, new hypotenuse will be $9\sqrt{5}$ cm. How long are the legs of the triangle?	**[5]**
90	If x = - 4 is a root of the equation $x^2 + 2x + 4p = 0$,find the values of k for which the equation x ^{2} + px(l + 3k) + 7(3 + 2k) = 0has equal roots.	**[5]**
91	In the centre of a rectangular lawn of dimensions 50 m × 40 m, a rectangular pond has to be constructed so that the area of the grass surrounding the pond would be 1184 m ^{2}. Find the length and breadth of the pond 	**[5]**
92	A train travels a distance of 90 km at a constant speed. Had the speed been 15 km/h more, it would have taken 30 minutes less for the journey. Find the original speed of the train.	**[5]**
93	Two pipes together can fill a tank in $\frac{15}{8}$ hours. The pipe withlarger diameter takes 2 hours less than the pipe with smaller diameter to fill the tank separately. Find the time in which each pipe can fill the tank separately.	**[5]**
94	A plane left 30 minutes later than the scheduled time and in order to reach its destination 1500 km away on time, it has to increase its speed by 250 km/hr from its usual speed. Find the usual speed of the plane.	**[5]**
95	Find all the values of k for which the quadratic equation 2x ^{2} + kx + 8 = 0 has equal roots. Also, find the roots.	**[5]**
96	The length of the sides forming right angle of a right triangle are 5x cm and (3x - 1)cm. If the area of the triangle is 60 cm ^{2}. Find its hypotenuse.	**[5]**
97	The length of the hypotenuse of a right - angled triangle exceeds the length of the base by 2 cm and exceeds twice the length of the altitude by 1 cm. Find the length of each side of the triangle.	**[5]**
98	A 2 - digit number is such that the product of its digits is 24. If 18 is subtracted from the number, the digits interchange their places. Find the number.	**[5]**
99	The difference of two numbers is 5 and the difference of their reciprocals is $\frac{1}{10}$. Find the numbers.	**[5]**
100	If the factory kept increasing its output by the same percentage every year. Find the percentage, if it is known that the output doubles in the last two years.	**[5]**

DELHI PUBLIC SCHOOL BULANDSHAHR

ARITHMETIC PROGRESSIONS

MCQs

1. 5th term of the sequence whose nth term is $4n + 2$ is

   a) 20 b) 22 c) 18 d) 23

2. The common difference of the AP $\frac{1}{p}, \frac{1-3p}{p}, \frac{1-6p}{p}$ is

   a) 3 b) -3 c) 1/p d) -1

3. If $k + 2, 4k - 6$ and $3k - 2$ are three consecutive terms of an AP then the value of k is

   a) 3 b) -3 c) -4 d) 4

4. The first four terms of AP whose first term is -2 and common difference is -2 are

   a) -2,0,2,4 b) -2,4,-8,16 c) -2,-4,-6,-8 d) -2,-4,-8,-16

5. The next term of AP is $\sqrt{7}, \sqrt{28}, \sqrt{63}$ is

   a) $\sqrt{70}$ b) $\sqrt{80}$ c) $\sqrt{97}$ d) $\sqrt{112}$

6. What is the value of x for which 2x, (x+10) and (3x+2) are the three consecutive terms of an AP ?

   a) 3 b) 6 c) 2 d) 5

7. If the first term of AP is p and the common difference is q, then what is its 10th term?

   a) p +9 q b) p - q c) q - p d) p - 2q

8. The sum of first 20 terms of the AP 1, 4, 7, 10 .... is

   a) 560 b) 570 c) 580 d) 590

9. Find the sum of all 11 terms of an AP whose middle term is 30

   a) 360 b) 370 c) 380 d) 330

10. If 4 times the 4th term of an AP is equal to 18 times the 18th term, then find the 22nd term

    a) 1 b) 2 c) 0 d) 4

11. If the first three terms of an AP are b, c and 2b , then find the ratio of b and c

    a) 2: 3 b) 1: 5 c) 3: 2 d) 5: 1

12. The nth term of an AP is 7 - 4n, then what is its common difference?

    a) 3 b) -3 c) -4 d) 4

13. Find the number of natural numbers between 102 and 998 which are divisible by 2 and 5 both

    a) 90 b) 89 c) d) 23

14. If common difference of AP is -6, find $a_{16} - a_{12}$?

    a) 23 b) -23 c) -24 d) 24

15. An AP starts with a positive fraction and every alternate term is an integer. If the sum of the first 11

terms is 33, then the fourth term is

a) 2 b) 3 c) 5 d) 6

16. The 4th term from the end of an AP $-11, -8, -5,$..... 49 is

a) 37 b) 40 c) 43 d) 58

17. There are 60 terms in an AP of which the first term is 8 and the last term is 185. The 31st term is

a) 56 b) 94 c) 85 d) 98

18. The 21st term of the AP whose first two terms are -3 and 4 is

a) 17 b) 137 c) 143 d) -143

19. If nth term of AP is $4n + 1$, then common difference is

a) 2 b) 4 c) 5 d) 6

20. If a,b,c,d,e are in AP then e-c

a) 2(c-a) b) 2(d-c) c) 2(f-d) d) d-c

Assertion-reason

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true

21. Assertion : If nth term of an AP is $7 - 4n$ then its common difference is -4

Reason : Common difference is given by $d = a_{n+1} - a_n$

22. Assertion : Common difference of the AP $-5, -1, 3, 7,$..... is 4

Reason : Common difference of the AP is given by $2d = a_3 - a_1$

23. Assertion : $a_{n+1} - a_n$ is not independent of n in an AP

Reason : $d = a_n - a_{n-1}$ is independent of n

24. Assertion :$-5, \frac{-5}{2}, 0, \frac{5}{2},$..... is an AP

Reason : The term of an AP can't have both positive and negative rational numbers

25. Assertion : If a_n denotes the nth term of AP 2,7,12,17……. then $a_{5050} - a_{2020} = 15150$

Reason : If a_n denotes the nth term of AP with common difference d then $a_p - a_q = (p - q)d$

26. Assertion : The nth term of the sequence $-8, -4, 0, 4,$.... is $4n - 12$

Reason : The nth term of AP is given by $a_n = a + (n - 1)d$

27. Assertion : The common difference of the AP in which $a_{15} - a_{10} = 30$ is 6

Reason : The nth term of the sequence 8, 13, 18,..... is $5n + 3$

28. Assertion : The sum of the series with nth term $T_n = 7 - 3n$ is -208, when number of terms is 15

Reason :Sum of AP is given by $S_n = \frac{n}{2}(2a + (n - 1)d)$

29. Assertion : a,b and c are in AP iff $2b = a + c$

Reason : In an AP sum of terms equidistant from the beginning and from the end is always equal to sum of first and last term

30. Assertion : The sum of first even natural numbers is $n(n + 1)$
Reason : The sum of first n odd natural numbers is $n(n - 1)$

2 marks each

31. If $3k - 2$, $4k - 6$ and $k + 2$ are three consecutive terms of AP, then find the value of k.

32. Which term of the progression $20,\ 19\frac{1}{4}, 18\frac{1}{2}, 17\frac{3}{4}$ is the first negative term?

33. How many two digits numbers are divisible by 3?

34. Which term of the AP 3, 15, 27, 39, ... will be 120 more than its 21st term?

35. Find 100 is a term of the AP 25, 28,31,..... or not.

36. Find the 7th term from the end of AP 7,10,13,.....184

37. In a certain AP 32th term is twice the 12th term. Prove that the 70th term is twice the 31st term.

38. The ninth term of an AP is -32 and the sum of its eleventh and thirteenth term is -94. Find the common difference of the AP

39. The seventeenth term of an AP exceeds its 10th term by 7. Find the common difference.

40. If the 2nd term of an AP is 8 and the 5th term is 17, find its 19th term.

41. Find the middle term of the AP 6, 13, 20, ... 216.

42. For AP show that $a_p + a_{p+2q} = 2a_{p+q}$

43. Find how many integers between 200 and 500 are divisible by 8.

44. How many terms of the AP 27,24,21,..... should be taken so that their sum is zero?

45. If the nth term of an AP is $7 - 3n$ find the sum of twenty five terms.

46. How many terms of the AP 65,60,55,..... be taken so that their sum is zero?

47. Find the values of a, b and c such that the numbers a,10,b,c,31 are in AP

48. Find the middle term of the AP 213, 205, 197, ... 37.

49. The fourth term of an AP is 11. The sum of the fifth and seventh terms of the AP is 34. Find the common difference

50. If five times the fifth term of an AP is equal to eight times its eighth term, show that its 13th term is zero.

3 marks each

51. The sum of four consecutive number in AP is 32 and the ratio of the product of the first and last term to the product of two middle terms is 7 : 15. Find the numbers.

52. Show that the sum of all terms of an AP whose first term is a, the second term is b and last term is c, is equal to $\frac{(a+c)(b+c-2a)}{2(b-a)}$

53. The 17th term of an AP is 5 more than twice its 8th term. If the 11th term of AP is 43, then find its nth term.

54. Find the 20th term of an AP whose 3rd term is 7 and the seventh term exceeds three times the 3rd term by 2.Also find the nth term of AP

55. If 7th term of AP is $\frac{1}{9}$ and 9th term is $\frac{1}{7}$ then find the 63rd term

56. The ninth term of an AP is equal to seven times the second term and twelfth term exceeds five times the third term by 2. Find the first term and the common difference.

57. Determine an AP whose third term is 9 and when fifth term is subtracted from 8th term, we get 6

58. An AP has pth, qth and rth terms as a,b and c respectively, Show that
$a(q - r) + b(r - p) + c(p - q) = 0$

59. For what value of n are the nth terms of two APs 63, 65, 67, ... and 3, 10, 17, ... equal?

60. The 14th term of an AP is twice its 8th term. If the 6th term is -8, then find the sum of its first 20 terms.

61. Find the number of multiple of 9 lying between 300 and 700

62. If the tenth term of an AP is 52 and the 17th term is 20 more than the 13th term, find AP

63. How many three digit numbers are such that when divided by 7, leave a remainder 3 in each case?

64. How many two digit numbers are divisible by 7?

65. How many three digit natural numbers are divisible by 7?

66. How many terms of an AP 9,17,25,..... must be taken to give a sum of 636?

67. The sum of first 7 terms of an AP is 63 and sum of its next 7 terms is 161. Find 28th term of AP

68. The common difference of an AP is -2. Find its sum, if first term is 100 and last term is -10

69. In an AP, if the 12th term is -13 and the sum of its first four terms is 24, find the sum of its first ten terms

70. If m times the mth term is equal to n times the nth term of an AP. Then prove that $(m + n)th$ term of AP is zero

5 marks each

71. If the sum of first four terms of an AP is 40 and that of first 14 terms is 280. Find the sum of its first n terms.

72. The first term of an AP is 3, the last term is 83 and the sum of all its terms is 903. Find the number of terms and the common difference of the AP.

73. Find the number of terms of the AP $-12, -9, -6,$..... 21. If 1 is added to each term of this AP, then find the sum of all terms of the AP thus obtained

74. Which term of the Arithmetic Progression $-7, -12, -17, -22$ will be -82? Is -100 any term of

the AP? Give reason

75. How many terms of the Arithmetic Progression 45, 39, 33, ... must be taken so that their sum is 180? Explain the double answer.

76. The sum of three numbers in AP is 12 and sum of their cubes is 288. Find the numbers.

77. If S_n denotes the sum of first n terms of an AP, prove that $S_{30} = 3(S_{20} - S_{10})$

78. The sum of first 20 terms of an AP is 400 and sum of first 40 terms is 1600. Find the sum of its first 10 terms.

79. Find the 60th term of the AP 8,10,12,..... if it has a total of 60 terms and hence find the sum of its last 10 terms

80. An arithmetic progression 5,12,19,.....has 50 terms. Find its last term. Hence find the sum of its last 15 terms

81. The sum of the 3rd and 7th terms of an AP is 6 and their product is 8. Find the sum of first 20 terms of the AP.

82. If the sum of first m terms of an AP is same as the sum of its first n terms ($m \neq n$) then show that the sum of its first $(m + n)$ terms is zero.

83. If $1 + 4 + 7 + 10 + \ldots\ldots + n = 287$, find n

84. How many terms of the AP $-6, \frac{11}{2}, -5, \ldots\ldots$ are needed to give the sum -25? Explain the double answer

85. An AP consists of 37 terms. The sum of the three middle most terms is 225 and the sum of the past three terms is 429. Find the AP

86. The digits of a positive number of three digits are in AP and their sum is 15. The number obtained by reversing the digits is 594 less than the original number. Find the number

87. A sum of Rs 280 is to be used towards four prizes. If each prize after the first is Rs 20 less than the its preceding one, find the value of each of the prize

88. The minimum age of children to be eligible to participate in a painting competition is 8 years. It is observed that the age of youngest boy was 8 years and the ages of rest of participants are having a common difference of 4 months. If the sum of ages of all the participants is 168 years, find the age of the eldest participant in the painting competition

89. Find the middle term of the sequence formed by all the numbers between 9 and 95, which leave a remainder 1 when divided by 3. Also find the sum of the numbers on both sides of middle term separately

90. A man repays a loan of Rs 3250 by paying Rs 20 in the first month and then increases the payment by Rs 15 every month. How long will it take him to clear the loan?

Case Based Questions

91. India is competitive manufacturing location due to low cost of manpower and strong technical and engineering capabilities. The production of air conditioner in a factory increases uniformly by a fixed number every year. It produced 12000 sets in 3rd year and 20400 in 10th year. Based on above information answer the following

a) Find production in 1st year
b) Find production in 8th year
c) Find production during first five years
d) In which year production is 30000
e) Find the difference of the production during 7th year and 5th year

92. Younger sister wants to buy an electric car and plans to take loan from a bank for her electric car. She repays her a total loan of Rs 321600 by paying every month starting with the first instalment of Rs 2000 and it increases the instalment by Rs 200 every month. Based on above information answer the following

a) Find the list of the instalment formed
b) The amount paid by her in 25th instalment
c) Find the difference of the amount in 4th and 6th instalment paid by younger sister
d) In how many installments can she clear her total bank loan?
e) Find the sum of the first seven instalments

93. In an exam hall, the examiner makes students sit in such a way that no students can cheat from other students. So teacher decides to mark the numbers on each chair from 1,2,3,..... There are students and each student is seated at alternate position in examination room such that the sequence formed is 1,3,5,.....Based on above information answer the following

a) What type of sequence is formed to follow the seating arrangement of students in the examination room?
b) Find the seat number of the last student in the examination room
c) Find the seat of the 10th vacant seat in the examination room

94. Push ups are a fast and effective exercise for building strength. These are helpful in almost all sports including athletics. While the push up primarily targets the muscles of the chest, arms and shoulders, support required from other muscles helps in toning up the whole body. Nitesh wants to participate in the push up challenge. He can currently make 3000 push ups in one hour. But he wants to achieve a target of 3900 push-ups in 1 hour for which he practices regularly. With each day of practice, he is able to make 5 more push-ups in one hour as compared to the previous day. If on first day of practice he makes 3000 push-ups and continues to practice regularly till his target is achieved. Keeping the above situation in mind answer the following questions:

a) Form an AP representing the number of push ups per day and hence find the minimum number of days he needs to practice before the day his goal is achieved
b) Find the total number of push ups performed by Nitesh up to the day his goal is achieved

95. The school auditorium was to be constructed to accommodate at least 1500 people. The chairs are to be placed in concentric circular arrangement in such a way that each succeeding circular row has 10 seats more than the previous one. Based on above information answer the following

a) If first circular row has 30 seats, how many seats will be there in the 10th row?
b) For 1500 seats in the auditorium, how many rows need to be there?
c) If 1500 seats are to be arranged in the auditorium, how many seats are still left to be put after 10th row?
d) If there were 17 rows in the auditorium, how many seats will be there in the middle row?

96. Manpreet Kaur is the national record holder for 2017 is the maximum distance for an throw of 18.86 m at the Asian Grand Prix in model, Keeping her as a role model, Sanjitha is determined to earn gold medal in Olympics one day. Initially her throw reached 7.56m only. Being an athlete in school, she regularly practiced both in the mornings and in the evenings and was able to improve the distance by 9 cm every week. During the special camp for 15 days, she started with 40 throws and every day kept increasing the number of throws by 12 to achieve this remarkable progress. Based on the above information solve the following questions

a) How many throws Sanjitha practiced on 11th day of the camp?
b) What would be Sanjitha's throw distance at the end of 6 weeks?
c) When will she be able to achieve a throw of 11.16m?
d) How many throws did she do during the entire camp of 15 days?

97. RCB Machine Pvt Ltd started making road roller 10 year ago. Company increased its production uniformly by a fixed number every year. The company produces 800 rollers in the 6th year and 1130 rollers in the 9th year.

a) What was the company's production in the first year?
b) What was the company's production in the 8th year?
c) What was the company's total production of the first 6 years?
d) What was the increase in the company's production every year?
e) In which year the company's production was 1350 rollers?

98. It takes 5 toothpicks to build the top trapezoid shown at below. You need 9 toothpicks to build 2 adjoined trapezoids and 13 toothpicks for 3 trapezoids.

a) If 1000 toothpicks are available, how many trapezoids will be in the last complete row?
b) How many complete rows will there be?
c) How many toothpicks will you use to construct these rows?

99. Jessica arranges a display of soup cans as shown in figure

a) List the number of cans in the top row, the second row, the third row, and so on, down to the tenth row
b) Write a recursive formula for the terms of the sequence.
c) If the cans are to be stacked 47 rows high, how many cans will it take to build the display?
d) If Jessica uses six cases (273 cans), how tall can she make the display?

100. Arc of a Baby Swing : When Mackenzie's baby swing is started, the first swing (one way) is a 30 inch arc. As the swing slows down, each successive arc is 1.5 inch less than the previous one.

a) Find the length of the tenth swing
b) How far Mackenzie has travelled during the 10 swings ?

DELHI PUBLIC SCHOOL BULANDSHAHR

Class – X

Worksheet

Subject - Mathematics

Topic – Real Numbers

1. HCF of 8, 9, 25 is
   a) 8 b) 9 c) 25 d) 1
2. Express 98 as a product of its primes
   a) $2^2 \times 7$ b) $2^2 \times 7^2$ c) 2×7^2 d) $2^3 \times 7$
3. If the LCM of a and 18 is 36 and the HCF of a and 18 is 2, then a =?
   a) 2 b) 3 c) 4 d) 1
4. If HCF (26, 169) = 13, then LCM (26, 169) is …
   a) 26 b) 52 c) 338 d) 13
5. The number 'π' is
   a) Natural number b) rational number
   c) irrational number d) rational or irrational
6. The ratio between the LCM and HCF of 5, 15, 20 is:
   a) 9 : 1 b) 4 : 3 c) 11 : 1 d) 12 : 1
7. The product of a non-zero number and an irrational number is:
   a) always irrational b) always rational
   c) rational or irrational d) none of these
8. L.C.M. of 23×32 and 22×33 is :
   a) 23 b) 33 c) $2^3 \times 3^3$ d) 22×32
9. Three farmers have 490 kg, 588 kg and 882 kg of wheat respectively. Find the maximum capacity of a bag so that the wheat can be packed in exact number of bags.
   a) 98 kg b) 290 kg c) 200 kg d) 350 kg
10. $m^2 - 1$ is divisible by 8, if m is
    a) an even integer b) an odd integer
    c) a natural number d) a whole number
11. The largest number which divides 60 and 75, leaving remainders 8 and 10 respectively, is
    a) 260 b) 75 c) 65 d) 13

12. The least number that is divisible by all the numbers from 1 to 8 (both inclusive) is
    a) 840 b) 2520 c) 8 d) 420

13. If the HCF of 408 and 1032 is expressible in the form 1032 x 2 + 408 × p, then the value of p is
    a) 5 b) -5 c) 4 d) -4
14. When a number is divided by 7, its remainder is always:
    a) greater than 7 b) at least 7 c) less than 7 d) at most 7

15. The HCF of two consecutive positive integer is
    a) 0 b) -1 c) 1 d) -4

16. If 3 is least prime factor of m and 5 is the least prime factor of n then the least prime factor of (m+n) is
    a) 0 b) 2 c) 3 d) 5

17 The sum of the HCF and LCM of 12, 21, 15 is

a) 423 b) 420 c) 417 d) 140

18. If the LCM of two number is 3600, then which of the following numbers cannot be the HCF

a) 600 b) 500 c) 400 d) 150

19. If P and q are two distinct prime numbers the LCM (p,q) is

a) 1 b) p c) q d) pq

20. If p and q are odd prime numbers such that p>q, then $p^2 - q^2$ is

a) an even number b) an odd number

c) an odd prime number d) a prime number

21. If HCF(98, 28) = m and LCM(98, 28) = n, then the value of n - 7 m is :

a)0 b) 28 c)98 d)198

22. The greatest number which divides 70 and 125, leaving remainders 5 and 8 respectively, is:

a)13 b) 65 c) 875 d) 1750

23. $\sqrt{0.4}$ is a /an

a)natural number b) integer

c) rational number d) irrational number

24. Which of the following cannot be the unit digit of 8^n , where n is a natural number?

a)4 b) 2 c) 0 d) 6

25. $(\sqrt{3} + 2)^2 + (\sqrt{3} - 2)^2$ is an

a) positive rational number b) negative rational number

c)positive irrational number d) negative irrational number

26. Let $p = x^2 y^2 z^n$ and $q = x^3 y^m z^2$, where x, y, z are prime numbers. If LCM (p,q) = $x^3 y^4 z^3$, then the value of (2m + 3n) is

a)18 b) 17 c) 15 d) 14

27. For anu prime number p, if p divides a^2 , where a is any real number then p also divides

a) a b) $a^{\frac{1}{2}}$ c) $a^{\frac{3}{2}}$ d) $a^{\frac{1}{8}}$

28. If $x = ab^3$ and $y = a^3b$, where a and b are prime numbers, then [HCF(x,y) – LCM (x,y)] is equal to

a) $1-a^3b^3$ b) ab(1-ab) c) $ab - a^4b^4$ d)ab(1-ab)(1+ab)

29. If x is the LCM of 4, 6, 8 and y is the LCM of 3, 5, 7 and p is the LCM of x and y, then which of the following is true?

a) p = 35x b) p = 4y c) p = 8x d) p = 16y

30 .If $a^b = 32$, where a and b are positive integers, then the value of b^{ab} is :

a) 72 b) 5^{10} c) 2^{10} d) 5^{12}

31. The least number which is a perfect square and is divisible by each of 16, 20 and 50 is

a) 1200 b) 100 c) 3600 d) 2400

32. If $(-1)^n + (-1)^8 = 0$, then n is

a) any positive integer

b) any negative integer
c) any odd number
d) any even number.

Direction: In the following questions, a statement of Assertion (A) is followed by a statement of Reason (R). Mark the correct choice as:
(a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).
(b) Both Assertion (A) and Reason (R) are true but Reason (R) is not the correct explanation of
(c) Assertion (A) is true but Reason (R) is false.
(d) Assertion (A) is false but Reason (R) is true.

33.**Assertion:** The H.C.F. of two numbers is 16 and their product is 3072. Then their L.C.M. = 162.
Reason: If a and b are two positive integers, then H.C.F. × L.C.M. = a × b.

34.**Assertion:** Denominator of 34.12345. When expressed in the form p/q, q ≠ 0, is of the form $2^m \times 5^n$, where m and n are non-negative integers.
Reason: 34.12345 is a terminating decimal fraction.

35.**Assertion:** 13/3125 is a terminating decimal fraction.
Reason: If q = $2^n.5^m$ where n and m are non-negative integers, then p/q is a terminating decimal fraction.

36. **Assertion:** 2 is an example of a rational number.
Reason: The square roots of all positive integers are irrational numbers.

37. **Assertion:** For any two positive integers p and q, HCF (p, q) × LCM (p, q) = p × q
Reason: If the HCF of two numbers is 5 and their product is 150, then their LCM is 40.

38. **Assertion:** $\mathbf{12^n}$ ends with the digit zero, where n is any natural number.
Reason: Any number ends with digit zero, if its prime factor is of the form 2^m x 5^n, where m and n are natural numbers.

39. **Assertion:** (18, 25) is a pair of co-primes
Reason: Pair of co-prime has a common factor 2.

40. **Assertion:** $\sqrt{x}$ is an irrational number, where x is a prime number.
Reason: Square root of any prime number is an irrational number.

41. **Assertion:** $\mathbf{29/625}$ is a terminating decimal fraction.
Reason: If factors of denominator are any irrational number.

42.Asserertion(A): For two odd prime numbers x and y,(x≠ y), LCM(2x , 4y) = 4xy
Reason(R) : LCM (x,y) is a multiple of HCF(x,y)

43. Assertion(A): Unit digit of 3^n cannot be an even number for any natural number n,
Reason(R) : 2 is not a prime factor of 3^n for any natural number n

TWO MARKS QUESTION

44. What is the greatest possible speed at which a man can walk 52 km and 91 km in an exact number of minutes?

45. Show that the product of two numbers 60 and 84 is equal to the product of their HCF and LCM

46. P and Q are two positive integers such that $P = p^3 q$ and $Q = (pq)^2$, where p and q are prime numbers. What is LCM (P, Q)?

47. The product of two numbers is 228096 and their LCM is 66. Find their HCF.

48. Prove that √5 is irrational

49. Prove that √3 is irrational

50. Find the sum of exponents of prime factors in the prime factorization of 216?

51. The difference of the irrational numbers 5 + √2 and 5 - √2?

52. Determine the prime factorization of 2057? And write the greatest prime number in this factorization

53. Show that 5-√3 is irrational

54. If $a=2^3\times3$, $b=2\times3\times5$, $c=3n\times5$ and LCM [a,b,c] = $2^3\times3^2\times5$ then, n=?

55. Explain why 3 × 5 × 7 + 7 is a composite number.

56. If n is an even prime number then, $2(7^n + 8^n)$ ends with?

57. If the HCF of 408 and 1032 is expressible in the form $1032\ m - 408\times5$,find m.

58. 144 cartons of coke cans and 90 cartons of Pepsi cans are to be stacked in a canteen. If each stack is of the same height and is to contain cartons of the same drink, what would be the greatest number of cartons each stack would have?

59. The length, breadth and height of a room are 825 cm, 675 cm and 450 cm respectively. Find the longest tape which can measure the three dimensions of the room exactly.

60. Find the LCM and HCF of the following pairs of positive integers by applying the prime factorization method. a) 225, 240 b) 52 ,63 ,162

61. Prove that 3√2+7 is irrational

62. The LCM of two numbers is 64699, their HCF is 97 and one of the numbers is 2231.Find the other.

63. Two brands of chocolates are available in packs of 24 and 15 respectively. If I need to buy an equal number of chocolates of both kinds, what is the least number of boxes of each kind I would need to buy?

64. Two numbers are in the ratio 4:5 and their HCF is 11. Find the LCM of these numbers.

65. Find the sum of exponents of prime factors in the prime factorization of 4004.

66. a and b are two positive integers such that the least prime factor of a is 3 and the least prime factor of b is 5. Then calculate the least prime factor of (a+ b).

67. Find the least number that is divisible by all numbers between 1 and 10 (both inclusive).

68.A rectangular Courtyard is 18 m 72 cm long and 13 m 20 cm broad it is to be paved with square tiles of the same size. Find the least possible number of such tiles.

69 In a morning walk 3 persons step off together, their steps measures 80 cm, 85 cm and 90 cm respectively. What is the minimum distance each should walk so that each can cover the distance in complete steps?

70. What is the HCF of smallest primer number and the smallest composite number?

71. What is the HCF of the smallest composite number and the smallest prime number?

72. If HCF (6,a) = 2 and LCM(6, a) = 60 , then find a.

THREE MARKS QUESTION

73. If the sum of LCM and HCF of two numbers is 1260 and their LCM is 900 more than their HCF then, find the product of two numbers.

74. Prove that 7 + 3√2 is not a rational number.

75. Prove that 2 - 3√5 is irrational number.

76. Prove that $(4\sqrt{2} + \frac{5}{3})$ is an irrational number given that $\sqrt{2}$ is an irrational number.

77. Is $(\sqrt{2} + \sqrt{3})^2$ and (2- √2) (2 + √2) irrational? Justify your answer.

78. Prove that the difference and quotient of (3 + 2√3) and (3 - 2√3) are irrational.

79. Two bells toll at intervals of 24 minutes and 36 minutes respectively. If they toll together at 9am, after how many minutes do they toll together again, at the earliest?

80. There are 44 boys and 32 girls in a class. These students arranged in rows for a prayer in such a way that each row consists of only either boys or girls, and every row contains an equal number of students. Find the minimum number of rows in which all students can be arranged.

81. The LCM of two number is 14 times their HCF. The sum of LCM and HCF is 600.If one numberis 280, then find the other number

82. If 144 Cartons of coke can and 90 cartons of Pepsi can are to be stacked in a canteen. If eachstack is of the same height and is to contain cartons of the same drink. What would be thegreater number of cartons each stack would have?

83. Find the largest number that will divide 398 , 436 and 542 leaving reminders 7,11 and 15 respectively

84. Find the largest number which divides 70 and 125 leaving reminder 5 and 8 respectively.

85. Can two numbers have 15 as their HCF and 175 as their LCM? Give reasons

86. Find HCF and LCM of 378, 180 and 420 by prime factorization method. Is HCF X LCM of these numbers equal to the product of given three numbers?

87. The sum of LCM and HCF of two numbers is 7380.If the LCM of these numbers is 7340 more than their HCF. Find the product of the two numbers.

88. hree sets of Physics, Chemistry and Mathematics books have to be stacked in such a way that all the books are stored subject-wise and the height of each stack is the same. The number of Physics books is 144, the number of Chemistry books is 180 and the number of Mathematics books is 192. Assuming that the books are of same thickness, determine the number of stacks of Physics, Chemistry and Mathematics books.

89. Let p, q and r be three distinct prime numbers.

Check whether p.q.r + q is a composite number or not.

Further , give an example for 3 distinct primes p, q, r such that

i. p.q.r + 1 is a composite number.
ii. P.q.r + 1 is a prime number.

90. Let x and y be two distinct prime numbers and $p = x^2 y^3$, $q = x y^4$, $r = x^5 y^2$. Find the HCF and LCM of p,q and r, Further check if HCF (p,q,r) x LCM(p,q,r) = p x q x r or not.

91. The LCM of 2 numbers is 14 times their HCF. The sum of LCM and HCF is 600. If one number is 280, then find the other number.

92. Find the smallest natural number by which 1200 should be multiplied so that the square root of the product is a rational number.

93. The HCF of 65 and 117 is expressible in the form . 65m - 117. Find the value of m. Also find the LCM of 65 and 117 using prime factorization method.

.FOUR MARKS QUESTION CASE BASED

94. A charitable trust donates 28 different books of Maths,16 different books of science and 12 different books of Social Science to the poor students. Each student is given maximum number of books of only one subject of his interest and each student got equal number of books

i. Find the number of books each student got.

ii. Find the total number of students who got books.

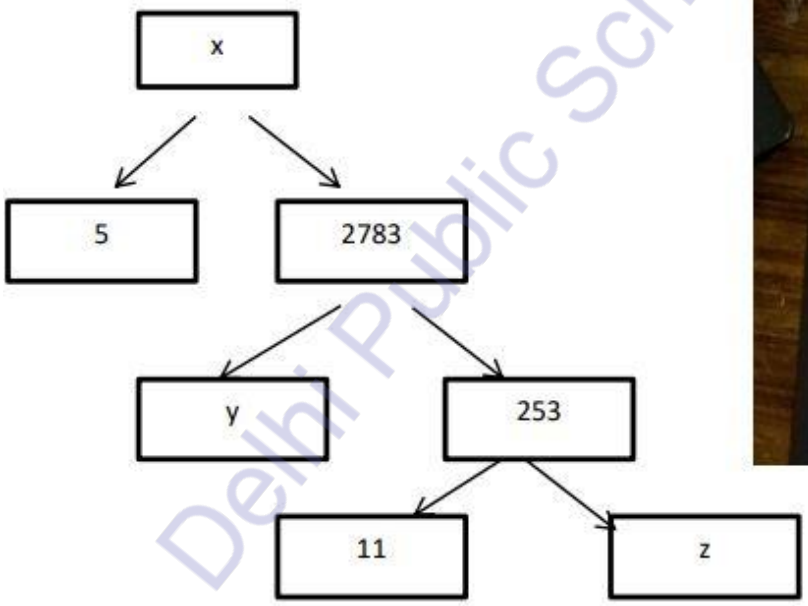
95. A seminar is being conducted by an Educational Organisation, where the participants will be educators of different subjects. The number of participants in Hindi, English and Mathematics are 60, 84 and 108 respectively.

(i) In each room the same number of participants are to be seated and all of them being in the same subject, hence maximum number participants that can accommodated in each room are

(ii) What is the minimum number of rooms required during the event?

(iii) The LCM of 60, 84 and 108 .

96.A Mathematics Exhibition is being conducted in your School and one of your friends is making a model of a factor tree. He has some difficulty and asks for your help in completing a quiz for the audience.



(i) What will be the value of x?

(ii) What will be the value of y?

(iii) What will be the value of z?

97. Shalvi is a tuition teacher and teaches mathematics to some kids at her home. She is very innovative and always plan new games to make her students learn concepts. Today, she has planned a prime number game. She announces the number 2 in her class and asked the first student to multiply it by a prime number and then pass it to second student. Second student also multiplied it by a prime number and passed it to third student. In this way by multiplying to a prime number the last student got 173250. He told this number to Shalvi in class. Now she asked some questions to the students as given below.

i. How many students are in the class?
ii. What is the highest prime number used by student?
iii. What is the least prime number used by students?
iv. Which prime number has been used maximum times?
v. Which prime number has been used minimum times?

98.Amar, Akbar and Anthony are playing a game. Amar climbs 5 stairs and gets down 2 stairs in one turn. Akbar goes up by 7 stairs and comes down by 2 stairs every time. Anthony goes 10 stairs up and 3 stairs down each time.

Doing this they have to reach to the nearest point of 100th stairs and they will stop once they find it impossible to go forward. They cannot cross 100th stair in anyway.

i. Who reaches the nearest point?
ii. How many times can they meet in between on same stair?
iii. Who takes least number of steps to reach near hundred?
iv. What is the first stair where any two out of three will meet together?
v. What is the second stair where any two out of three will meet together?

99.The Republic Day parade, first held in 1950, has been a yearly ritual since. The parade marches from the Rashtrapati Bhawan along the Rajpath in New Delhi. Several regiments of the army, navy, and air force, along with their bands, march to India Gate. The parade is presided over by the President of India, who is the Commander-in-Chief of the Indian Armed Forces. As he unfurls the tricolour, the national anthem is played. The regiments of the Armed Forces then start their march past. Prestigious awards like Kirti Chakra, Ashok Chakra, Paramvir Chakra and Vir Chakra are given out by the President. Nine to twelve different regiments of the Indian

Army, in addition to the Navy and Air Force march toward India Gate along with their bands. Contingents of paramilitary forces and other civil forces also participate in the parade.

On 71th republic day parade, captain RS Meel is planning for parade of following two group:
(a) First group of Army troops of 624 members behind an army band of 32 members.

(b) Second group of CRPF troops with 468 soldiers behind the 228 members of bikers.

These two groups are to march in the same number of columns. This sequence of soldiers is followed by different states Jhanki which are showing the culture of the respective states.

i. What is the maximum number of columns in which the army troop can march?
ii. What is the maximum number of columns in which the CRPF troop can march?
iii. What is the maximum number of columns in which total army troop and CRPF troop together can march past?
iv. What should be subtracted with the numbers of CRPF soldiers and the number of bikers so that their maximum number of column is equal to the maximum number of column of army troop?
v. What should be added with the numbers of CRPF soldiers and the number of bikers so that their maximum number of column is equal to the maximum number of column of army troop?

100 .Ravish runs a book shop at school of Math, Gurgaon. He received 480 chemistry books, 192 physics books and 672 Mathematics books of class XI. He wishes to average these books in minimum numbers of stacks such that each stack consists of the books on only one subject and the number of books in each stack is the same.

(a) Find the number of books in each stack.
(b) Find the Number of stacks of Mathematics books are
(c) Find the Minimum number of stacks of all the books.
(d) Find the Difference in number of stacks of Mathematics books and sum of stacks of Physics and Chemistry books .

DELHI PUBLIC SCHOOL, BULANDSHAHR

SUBJECT: MATHEMATICS

CLASS: X

Worksheet: Pair of linear equations in two variables

General form of linear equation in two variable is given by ax + by + c = 0. Where both a and b cannot be zero at same time. For any linear equation, each solution (x, y) corresponds to a point on the line. The graph of a linear equation is a **straight line**.

Two linear equations in the same two variables are called a pair of linear equations in two variables. The most general form of a pair of linear equations is: $a_1x + b_1y + c_1 = 0$; $a_2x + b_2y + c_2 = 0$
where a_1, a_2, b_1, b_2, c_1 and c_2 are real numbers, such that $a_1^2 + b_1^2 \neq 0$, $a_2^2 + b_2^2 \neq 0$.

A pair of values of variables 'x' and 'y' which satisfy both the equations in the given system of equations is said to be a solution of the **simultaneous pair** of linear equations.

Relationship between coefficient of the pair of equations	**Graph**	**Number of Solutions**	**Consistency of System**
$\frac{a1}{a2} \neq \frac{b1}{b2}$	Intersecting lines	Unique solution	Consistent
$\frac{a1}{a2} = \frac{b1}{b2} \neq \frac{c1}{c2}$	Parallel lines	No solution	Inconsistent
$\frac{a1}{a2} = \frac{b1}{b2} = \frac{c1}{c2}$	Co-incident lines	Infinite solutions	Consistent(Dependent)

MCQ

1. A pair of linear equations $a_1x + b_1y + c_1 = 0$; $a_2x + b_2y + c_2 = 0$ is said to be inconsistent, if

(a) $\frac{a_1}{a_2} \neq \frac{b_1}{b_2}$ **(b)** $\frac{a_1}{a_2} = \frac{b_1}{b_2} \neq \frac{c_1}{c_2}$ **(c)** $\frac{a_1}{a_2} = \frac{b_1}{b_2} = \frac{c_1}{c_2}$ **(d)** $\frac{a_1}{a_2} \neq \frac{c_1}{c_2}$

2. Graphically, the pair of equations 7x – y = 5; 21x – 3y = 10 represents two lines which are
(a) intersecting at one point (b) parallel (c) intersecting at two points (d) coincident

3. The pair of equations 3x – 5y = 7 and – 6x + 10y = 7 have
(a) a unique solution (b) infinitely many solutions (c) no solution (d) two solutions

4. The pair of equations x = 0 and x = 5 has
(a) no solution (b) unique/one solution (c) two solutions (d) infinitely many solutions

5. The pair of equation x = – 4 and y = – 5 graphically represents lines which are
(a) intersecting at (- 5, – 4) (b) intersecting at (- 4, – 5) (c) intersecting at (5, 4) (d) intersecting at (4, 5)

6. If x = a, y = b is the solution of the equations x + y = 5 and 2x – 3y = 4, then the values of a and b are respectively
(a) 6, -1 (b) 2, 3 (c) 1, 4 (d) 19/5, 6/5

7. The value of k, for which equations 3x + 5y = 0 and kx + 10y = 0 has a non-zero solution is
(a) 6 (b) 0 (c) 2 (d) 5

8. The value of k for which the equations $(3k + l)x + 3y = 2$; $(k^2 + l)x + (k – 2)y = 5$ has no solution, then k is equal to

(a) 2 (b) 3 (c) 1 (d) -1

9. Asha has only ₹1 and ₹2 coins with her. If the total number of coins that she has is 50 and the amount of money with her is ₹75, then the number of ₹1 and ₹2 coins are, respectively

(a) 35 and 15 (b) 15 and 35 (c) 35 and 20 (d) 25 and 25

10. One equation of a pair of dependent linear equations is $2x + 5y = 3$. The second equation will be

(a) $2x + 5y = 6$ (b) $3x + 5y = 3$ (c) $-10x – 25y + 15 = 0$ (d) $10x + 25y = 15$

11. If the lines given by $2x + ky = 1$ and $3x – 5y = 7$ are parallel, then the value of k is

(a) -10/3 (b) 10/3 (c) 13 (d) 7

12. The graph of $x = -2$ is a line parallel to the

(a) x-axis (b) y-axis (c) both x- and y-axis (d) none of these

13. Two equations in two variables taken together are called

(a) linear equations (b) quadratic equations (c) simultaneous equations (d) none of these

14. If a=m and b=l then the system of equations $ax + by = c$, $lx + my = n$, has

(a) a unique solution (b) no solution (c) infinitely many solutions (d) none of these

15. The value of k, for which the system of equations $x + (k + l)y = 5$ and $(k + l)x + 9y = 8k – 1$ has infinitely many solutions is

(a) 2 (b) 3 (c) 4 (d) 5

16. The father's age is six times his son's age. Four years hence, the age of the father will be four times his son's age. The present ages of the son and the father are, respectively

(a) 4 and 24 (b) 5 and 30 (c) 6 and 36 (d) 3 and 24

17. The sum of the digits of a two-digit number is 9. If 27 is added to it, the digits of the number get reversed. The number is

(a) 27 (b) 72 (c) 45 (d) 36

18. A fraction becomes 1/3 when 1 is subtracted from the numerator and it becomes 1/4 when 8 is added to its denominator. The fraction obtained is:

(a) 3/12 (b) 4/12 (c) 5/12 (d) 7/12

19. Ritu can row downstream 20 km in 2 hours, and upstream 4 km in 2 hours. Her speed of rowing in still water and the speed of the current is:

(a) 6km/hr and 3km/hr (b) 7km/hr and 4km/hr (c) 6km/hr and 4km/hr (d) 10km/hr and 6km/hr

20. The value of c for which the pair of equations $cx – y = 2$ and $6x – 2y = 3$ will have infinitely many solutions is

(a) 3 (b) -3 (c) -12 (d) no value

21. What is the condition for which the pair of equations $ax + 2y = 7\ and\ 3x + by = 16$ represents parallel lines?

a) a = 3 b) b = 2 c) ab = 6 d) $ab \neq 6$

22. The pair of linear equations

$3x + 7y = k$ & $12x + 2ky = 4k + 1$ do not have any solution if

a) k = 7 b) k = 14 c) k = 21 d) $k \neq 14$

23. The pair of equations y = 3 and y = -7 has

a) One solution b) two solutions c) no solutions d) infinitely many solutions

24. The pair of equations x=a and y=b graphically represents lines which are

a) parallel b) intersecting at (a,b) c) intersecting at (b,a) d) no solution

25. If $291x + 3y = 0\ and\ 4x - 113y = 0, then\ x + y =$

a) none of these b) 295 c) -110 d) 0

26. The equation of line which is parallel to x-axis at a distance of 5 units below the origin is

a) y = -5 b) y = 5 c) x +y = 5 d) x = -5

27. The pair of linear equations

$7x - 3y = 4$

$3x + \frac{k}{7}y = 4$ are consistent only when

a) k = 9 b) k = -9 c) k ≠ 9 d) k ≠ -9

DIRECTION: In the questions (28-35), a statement of assertion (A) is followed by a statement of reason (R). Mark the correct choice as:

(a) Both assertion (A) and Reason (R) are true reason (R) is the correct explanation of assertion(A).
(b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).
(c) Assertion (A) is true but reason (R) is false.
(d) Assertion (A) is false but reason (R) is true.

28. Assertion: The pair of equations y = 0 and y = -5 have one solution.
Reason : intersecting lines have one solution.
29. Assertion: The pair of equations $x + 2y - 3 = 0$ and $6y + 3x - 9 = 0$ are consistent.
Reason : If pair of linear equation have any solution they are consistent.
30. Assertion: The line represented by $x = 7$ is parallel to the x–axis
Reason : If two lines are parallel then they have no solution.
31. Assertion: A linear equation 3x+5y=7 has unique solution.
Reason : Each linear equation represent line on graph.
32. Assertion: A linear equation in two variable has infinitely many solutions.
Reason : Each linear equation represent line on graph.
33. Assertion: If x=2 and y=1 is the solution of equation 2x+3y=k then value of k is 7.
Reason : Every point which is the solution of the equation , satisfy that equation.
34. Assertion: Infinite number of lines can pass through the point (3, -2)
Reason : A unique line passes through the two given points.
35. Assertion: A point (3,0) lies on the graph of 4x+3y=12
Reason : A point which satisfy the equation lies on its graph.

Section B (2 Marks each)

36. Solve for x and y, $7(y + 3) - 2(x + 2) = 14$ *and* $4(y - 2) + 3(x - 3) = 2$

37. Solve for x and y, $0.5x + 0.7y = 0.74$ &

$0.3x + 0.5y = 0.5$

Determine the value of "k" for which the given system of equation has infinitely many solutions.

38. $(k - 3)x + 3y = k$

$kx + ky = 12$

39. $2x + 3y = 4$

$(k + 2)x + 6y = 3k+2$

40. $x + (k + 1)y = 5$

$(k + 1)x + 9y = 8k - 1.$

41. For what value of k, will the system of equations

$x + 2y = 5$ & $3x + ky - 15 = 0$ are consistent

42. For what value of k, will the system of equations

$x + 2y = 5$ & $3x + ky - 15 = 0$ are in consistent

43. Solve for x and y: 27x + 31y = 85; 31x + 2 7y = 89

44. Half the perimeter of a rectangular garden, whose length is 4 m more than its width, is 36 m. Find the dimensions of the garden.

45. Solve for x and y, $0.5x + 0.7y = 0.74$ &

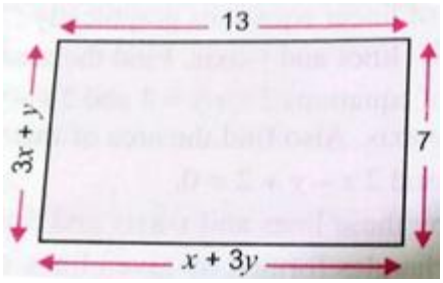
$$0.3x + 0.5y = 0.5$$

Solve the following (46-47)pair of linear equations by the substitution method.

46. x + y = 14; x – y = 4

47. 3x – y = 3 ; 9x – 3y = 9

48. Find the value of x and y in the given rectangular figure



49. Sum of two numbers is 35 and their difference is 13. Find the two numbers.

50.

Section C (3 Marks Questions)

Solve for x and y

51. $ax + by = \frac{a+b}{2}$ and $3x + 5y = 4$

52. $\frac{a^2}{x} - \frac{b^2}{y} = 0$ and $\frac{a^2b}{x} + \frac{b^2a}{y} = a + b$ $; x, y \neq 0$

53. $217x + 131y = 913$

$131x + 217y = 827$

54. $\frac{x}{2} + y = 0.8$ & $\frac{7}{x+\frac{y}{2}} = 10$

55. $\frac{xy}{x+y} = \frac{6}{5}$ & $\frac{xy}{y-x} = 6$

56. $\frac{2}{\sqrt{x}} + \frac{3}{\sqrt{y}} = 2$ & $\frac{4}{\sqrt{x}} - \frac{9}{\sqrt{y}} = -1$

If the following system of equations has infinitely many solutions, find the value of a and b (24-25)

57. $2x + 3y = 7$

$(a + b)x + (2a - b)y = 21$

58. $2x + 3y = 7$

$2ax + (a + b)y = 28$

59. Find the area of the triangle formed by the line $\frac{x}{a} + \frac{y}{b} = 1$ with the coordinate axes.

60. Solve $3(2u + v) = 7uv$ & $3(u + 3v) = 11uv$

61. Check graphically whether the pair of equations 3x – 2y + 2 = 0 and 3/2x – y + 3 = 0, is consistent. Also find the coordinates of the points where the graphs of the equations meet the Y-axis.

62. Solve the following pair of equations for x and y: $a^2/x - b^2/y = 0$; $a^2b/x + b^2a/y = a + b$, $x \neq 0$; $y \neq 0$

63. The age of the father is twice the sum of the ages of his 2 children. After 20 years, his age will be equal to the sum of the ages of his children. Find the age of the father.

64. The owner of a taxi company decides to run all the taxis on CNG fuel instead of petrol/diesel. The taxi charges in city comprises of fixed charges together with the charge for the distance covered. For a journey of 13 km, the charge paid is ₹129 and for a journey of 22 km, the charge paid is ₹210.What will a person have to pay for travelling a distance of 32 km?

65. 7x – 5y – 4 = 0 is given. Write another linear equation, so that the lines represented by the pair are:
(i) intersecting (ii) coincident (iii) parallel

66. Solve for x and y:

$\frac{10}{x+y} + \frac{2}{x-y} = 4$ $1\frac{15}{x+y} - \frac{5}{x-y} = -2$ $x + y \neq 0$; $x - y \neq 0$

66. Calculate the area bounded by the line x + y = 10 and both the co-ordinate axes.

67. 4 men and 6 boys can finish a piece of work in 5 days while 3 men and 4 boys can finish it in 7 days. Find the time taken by 1 man alone or then by 1 boy alone.

68. Solve 2x + 3y = 11 and 2x – 4y = – 24 and hence find the value of 'm' for which y = mx + 3.

69. For which values of a and b do the following pair of linear equations have infinite solutions?
2x + 3y = 7 ; (a – b) x + (a + b) y = 3a + b – 2

70. Five years hence, the age of Jacob will be three times that of his son. Five years ago, Jacob's age was seven times that of his son. What are their present ages?

71. A man has only 20 paisa coins and 25 paisa coins in his purse. If he has 50 coins in all totalling Rs. 11.25. How many coins of each kind does he have?

72. On selling a T.V. at 5% gain and a fridge at 10% gain, a shopkeeper gains Rs. 2000. But if he sells the T.V. at 10% gain and the fridge at 5% loss. He gains Rs. 1500 on the transaction. Find the actual price of TV and fridge.

73. The sides of equilateral triangle (in cm) are $\frac{2}{3}p + 2q + \frac{5}{2}$, $2p + \frac{q}{2}$ and $\frac{5}{3}p + q + \frac{1}{2}$. Find its perimeter.

Section D (5 Marks Questions)

74. A boat takes 4 hours to go 44 km downstream and it can go 20 km upstream in the same time. Find the speed of the stream and that of the boat in still water.

75. A man travels 300 km partly by train and partly by car. He takes 4 hours if the travels 60 km by train and the rest by car. If he travels 100 km by train and the remaining by car, he takes 10 minutes longer. Find the speeds of the train and the car separately.

76. Solve the following pair of linear equations graphically: x + 3y = 6 ; 2x – 3y = 12
Also find the area of the triangle formed by the lines representing the given equations with y-axis.

77. Draw the graphs of the equations x – y + 1 = 0 and 3x + 2y – 12 = 0. Determine the coordinates of the vertices of the triangle formed by these lines and x-axis.

78. Draw the graphs of the equations x=3, x=5 and 2x-y-4=0 on same graph sheet.

79. If $ax + by = a^2 - b^2 \; and \; bx + ay = 0$, then find the value of $x + y$

80. Draw the graph of $2x + y = 6 \; and \; 2x - y + 2 = 0$. Shade the region bounded by these lines and y-axis. Find the area of shaded region.

81. Determine graphically the vertices of a trapezium, the equations of whose sides are

$x = 0, y = 0, y = 4 \; and \; 2x + y = 6$. Also determine its area.

82. A and B each have certain number of oranges. A says to B "If you give me 10 of your oranges, I will have twice the number of oranges left with you." B replies , " If you give me 10 of your oranges, I will have the same number of oranges as left with you." Find the number of oranges with A and B separately.

83. . It can take 12 hours to fill a swimming pool using two pipes. If the pipe of larger diameter is used for 4 hours and the pipe of smaller diameter for 9 hours, only half the pool can be filled. How long would it take each pipe to fill the pool separately?

84. Solve for x and y; $\frac{7}{3(3x+2y)} + \frac{2}{3y-2x} = \frac{5}{6}$; $\frac{91}{4(3x+2y)} - \frac{1}{3y-2x} = 3$

85. Solve for x and y ; $2^x + 3^y = 17$, $2^{x+2} - 3^{y+1} = 5$

86. If the length of a rectangle is reduced by 5 units and its breadth is increased by 2 units then the area of the rectangle is reduced by 80 sq. units. However, if we increase its length by 10 units and decrease the breadth by 5 units, its area is increased by 50 sq. units. Find the length and breadth of the rectangle.

87. In Δ ABC, ∠C = 3∠B = 2(∠A +∠B). Find the angles.

88. Find the four angles of a cyclic quadrilateral ABCD in which

∠A =(2x -1), ∠B = (y + 5) , ∠C = (2y + 15) and ∠D = (4x - 7).

89. If three times the larger of two numbers is divided by the smaller, we get 4 as the quotient and 8 as the remainder. If five times the smaller is divided by the larger, we get 3 as the quotient and 5 as the remainder. Find the numbers.

90. If 2 is added to each of two given numbers, their ratio becomes 1 : 2. However, if 4 is subtracted from each of the given numbers, the ratio becomes 5 : 11. Find the numbers.

91. There are two classrooms A and B. If 10 students are sent from A to B, the number of students in each room becomes the same. If 20 students are sent from B to A, the number of students in A becomes double the number of students in B. Find the number of students in each room.

92. A man invested an amount at 10% per annum and another amount at 8% per annum simple interest. Thus, he received ` 1350 as annual interest. Had he interchanged the amounts invested, he would have received ` 45 less as interest. What amounts did he invest at different rates?

93. Points A and B are 70 km apart on a highway. A car starts from A and another car starts from B simultaneously. If they travel in the same direction, they meet in 7 hours. But, if they travel towards each other, they meet in 1 hour. Find the speed of each car.

94. The length of a room exceeds its breadth by 3 metres. If the length is increased by 3 metres and the breadth is decreased by 2 metres, the area remains the same. Find the length and the breadth of the room.

95. A railway half ticket costs half the full fare and the reservation charge is the same on half ticket as on full ticket. One reserved first class ticket from Mumbai to Delhi costs ` 4150 while one full and one half reserved first class tickets cost ` 6255. What is the basic first class full fare and what is the reservation charge?

96. A chemist has one solution containing 50% acid and a second one containing 25% acid. How much of each should be used to make 10 litres of a 40% acid solution?

97. 90% and 97% pure acid solutions are mixed to obtain 21 litres of 95% pure acid solution. Find the quantity of each type of acids to be mixed to form the mixture.

98. A two-digit number is obtained by either multiplying the sum of the digits by 8 and then subtracting 5 or by multiplying the difference of the digits by 16 and then adding 3. Find the number.

Case study questions(4 Marks each)

99. Case Study 1 Reena has only 20 paisa coins and 25 paisa coins in his purse. If she has 50 coins in all totalling Rs. 11.20. His friend in order to analysis the situation assume she has 'x' number of 20 paisa coins and 'y' number of 25 paisa coins.

i) Write a linear equation in variables x and y considering total number of coins Reena has. (1)

Ii) Write a linear equation in variables x and y considering the total money she has. (1)

iii) (a) How many coins of 20 paisa and 25 paisa she has?

Or

(b) Draw the graph of equation formed in part (i) and (ii) on same graph paper. (2)

100. Vijay is the fruit seller in the village in Bulandshahr. He had some bananas, and in first case he divided them into two lots A and B. He sold the first lot at the rate of Rs 2 for 3 bananas and the second lot at the rate of Re 1 per banana, and got a total of Rs 400. If in second case he had sold the first lot at the rate of Re 1 per banana, and the second lot at the rate of Rs 4 for 5 bananas, his total collection would have been Rs 460.

i) write linear equation in first case (1)

ii) write linear equation in second case (1)

iii) Find the total number of bananas he had. (2)

101. A famous jeweller in the city of Bangalore has bars of 18-carat gold and 12-carat gold. He makes different jewellery items of different Cartes for his customers. As per the requirement of one of his customer , he needs a bar of 16-carat gold, weighing 120 g? (Given: Pure gold is 24-carat). If he takes x grams od 18-carat gold bar and take y grams of 12-cartes gold bar.

i) write linear equation in accordance with the weight of metal (1)

ii) write linear equation in accordance with the purity of metal (1)

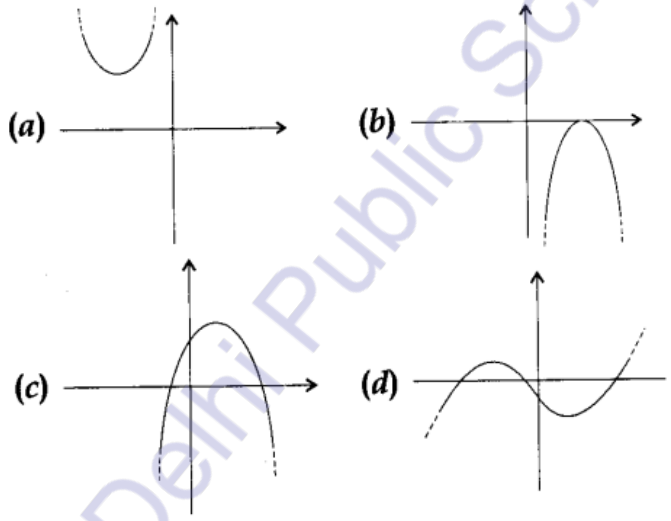
iii) Find the value of x and y. (2)

DELHI PUBLIC SCHOOL BULANDSHAHR

Polynomials

MULTIPLE CHOICE QUESTIONS

1. If one zero of the quadratic polynomial $x^2 + 3x + k$ is 2, then the value of k is
   (a) 10 (b) -10 (c) 5 (d) -5
2. The zeroes of the quadratic polynomial $x^2 + kx + k$, $k \neq 0$,
   (a) cannot both be positive (b) cannot both be negative
   (c) are always unequal (d) are always equal
3. If one of the zeroes of the quadratic polynomial $(k - 1)x^2 + kx + 1$ is -3, then the value of k is
   (a) -4/3 (b) 4/3 (c) 2/3 (d) -2/3
4. A quadratic polynomial, whose zeroes are -3 and 4, is
   (a) $x^2 - x + 12$ (b) $x^2 + x + 12$ (c) $x^2/2 - x/2 - 6$ (d) $2x^2 + 2x - 24$
5. If the zeroes of the quadratic polynomial $x^2 + (a + 1)x + b$ are 2 and -3, then
   (a) a = -7, b = -1 (b) a = 5, b = -1 (c) a = 2, b = -6 (d) a – 0, b = -6
6. The number of polynomials having zeroes as -2 and 5 is
   (a) 1 (b) 2 (c) 3 (d) more than 3
7. The zeroes of the quadratic polynomial $x^2 + 99x + 127$ are
   (a) both positive (b) both negative (c) one positive and one negative (d) both equal
8. If the zeroes of the quadratic polynomial $ax^2 + bx + c$, $c \# 0$ are equal, then
   (a) c and a have opposite signs (b) c and b have opposite signs
   (c) c and a have the same sign (d) c and b have the same sign
9. If one of the zeroes of a quadratic polynomial of the form $x^2 + ax + b$ is the negative of the other, then it
   (a) has no linear term and the constant term is negative.
   (b) has no linear term and the constant term is positive.
   (c) can have a linear term but the constant term is negative.
   (d) can have a linear term but the constant term is positive.
10. Which of the following is not the graph of quadratic polynomial?



11. The number of polynomials having zeroes as 4 and 7 is
    (a) 2 (b) 3 (c) 4 (d) more than 4
12. A quadratic polynomial, whose zeores are -4 and -5, is
    (a) x^2-9x + 20 (b) $x^2 + 9x + 20$ (c) x^2-9x- 20 (d) $x^2 + 9x - 20$
13. If zeroes of $p(x) = 2x^2 - 7x + k$ are reciprocal of each other, then value of k is
    (a) 1 (b) 2 (c) 3 (d) 4
14. The quadratic polynomial, the sum of whose zeroes is –5 and their product is 6, is
    (a) $x^2 + 5x + 6$ (b) $x^2 - 5x + 6$ (c) $x^2 - 5x - 6$ (d) $-x^2 + 5x + 6$
15. If $p(x) = ax^2 + bx + c$ and a + b + c = 0, then one zero is

(a) -b/a (b) c/a (c) b/c (d) none of these

16. The zeroes of the polynomial $x^2 - 3x - m(m + 3)$ are
(a) m, m + 3 (b) –m, m + 3 (c) m, – (m + 3) (d) –m, – (m + 3)

17. If p and q are the zeroes of the quadratic polynomial $f(x) = 2x^2 - 7x + 3$, find the value of p + q – pq is
(a) 1 (b) 2 (c) 3 (d) None of these

18. If one zero of polynomial $(k^2 + 16)x^2 + 13x + 8k$ is reciprocal of the other then k is equal to
(a) – 4 (b) +4 (c) 8 (d) 2

19. If α and β are the zeroes of a quadratic polynomial $x^2 - x - 2$ then $\frac{1}{\alpha} + \frac{1}{\beta}$ is
(a) 1/2 (b) -1/2 (c) 1 (d) 2

20. If α and β are zereos of the polynomial $2x^2 - 5x + 7$, then the value of $\frac{1}{\alpha} + \frac{1}{\beta}$ is
(a) 7/5 (b) 5/7 (c) -5/7 (d) -7/5

21. If and are the zeroes of polynomial $3x^2 + 6x + k$ such that $\alpha+\beta+\alpha\beta = -\frac{2}{3}$, then the value of k is :
(a) -8 (b)8 (c)-4 (d) 4

22. IF the zeroes of the polynomial $ax^2 + bx + \frac{2a}{b}$ are reciprocal of each other, then the value of b is:
(a) 2 (b) $\frac{1}{2}$ (c)-2 (d) $\frac{1}{2}$

23. Zeroes of the polynomial $p(y) = 7y^2 - \frac{11}{3}y - \frac{2}{3}$ are
(a) $\frac{-2}{3}, \frac{-1}{7}$ (b) $\frac{-1}{3}, \frac{-2}{7}$ (c) $\frac{2}{3}, \frac{1}{7}$ (d) $\frac{2}{3}, \frac{-1}{7}$

24. If α and β are the zeroes of the polynomial $p(x) = x^2 - ax - b$, then the value of $(\alpha + \beta + \alpha\beta)$ is equal to :
(a) a + b (b) – a – b (c) a – b (d) – a + b

25. If one zero of the polynomial $q(x) = (p^2 + 4)x^2 + 65x + 4p$ is reciprocal of the other, then the value of p is
(a) -1 (b)1 (c)-2 (d) 2

ASSERTION REASON BASED QUESTIONS

1. Assertion (A): $x^2 + 4x + 5$ has two real zeroes.
Reason (R): A quadratic polynomial can have at the most two zeroes.

2. Assertion (A): If the sum of the zeroes of the quadratic polynomial $x^2 - 2kx + 8$ are is 2 then value of k is 1.
Reason (R): Sum of zeroes of a quadratic polynomial $ax^2 + bx + c$ is –b/a

3. Assertion : $x^2 + 7x + 12$ has no real zeroes.
Reason: A quadratic polynomial can have at the most two zeroes.

4. Assertion : If the sum of the zeroes of the quadratic polynomial $x^2 - 2kx + 8$ is 2 then value of k is 1.
Reason : Sum of zeroes of a quadratic polynomial $ax^2 + bx + c$ is -b/a

5. Assertion : $P(x) = 4x^3 - x^2 + 5x^4 + 3x - 2$ is a polynomial of degree 3.
Reason : The highest power of x in the polynomial P(x) is the degree of the polynomial.

6. Assertion : x^3+x has only one real zero.
Reason : A polynomial of nth degree must have n real zeroes.

7. Assertion : If one zero of polynomial $p(x) = (k^2 + 4)x^2 + 13x + 4k$ is reciprocal of the other, then k = 2.
Reason : If (x - a) is a factor of p(x), then p(a) = 0 i.e., a is a zero of p(x).

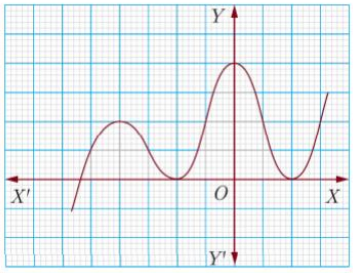
8. Assertion : $x^2 + 4x + 5$ has two zeroes.
Reason : A quadratic polynomial can have at the most two zeroes.

9. Assertion : Degree of a zero polynomial is not defined.
Reason : Degree of a non-zero constant polynomial is 0.

10. Assertion : If the product of the zeroes of the quadratic polynomial $x^2+3x+5k$ is -10 then value of k is -2.

Reason : Sum of zeroes of a quadratic polynomial ax^2+bx+c is -b/a

11. Assertion : The graph y=f(x) is shown in figure, for the polynomial f(x). The number of zeroes of f(x) is 3.
Reason : The number of zero of the polynomial f(x) is the number of point of which f(x) cuts or touches the axes.



12. Assertion : $3-2\sqrt{5}$ is one zero of the quadratic polynomial then other zero will be $3+2\sqrt{5}$.
Reason : Irrational zeros (roots) always occurs in pairs.

13. Assertion : If one zero of polynomial $p(x) = (k + 4)x^2 + 13x + 3k$ is reciprocal of other, then k = 2.
Reason : If $(x – \alpha)$ is a factor of p(x), then $p(\alpha) = 0$ i.e. α is a zero of p(x).
14. Assertion : A polynomial of degree 5 is divided by a quadratic polynomial. If it leaves a remainder, then the degree of remainder is 1 or 0.
Reason : Degree of remainder is always less than divisor.
15. Assertion : The polynomial $p(x) = 5x – 1/2$ is a linear polynomial.
Reason : The general form of linear polynomial is ax+b.
16. Assertion : The graph of a polynomial intersect x-axis at 3 points and y-axis at 1 points, the polynomial has 3 zeroes.
Reason : The number of zeroes that a polynomial p(x) can have is the number of times polynomial intersect x and y axis.
17. Assertion: -1& -4 are the zeroes of polynomial x^2-3x-4
Reason: A real number k is said to be a zero of polynomial P(x) if P(k)= 0
18. Assertion: the graph of quadratic polynomial P(x) intersect x-axis at two point
Reason: degree of quadratic polynomial is 2
19. Assertion: The graph of a polynomial p(x) is a straight line parallel to x axis. The polynomial has no zeros.
Reason (R): If a polynomial P(x) does not intersect the x-axis at any point, it does not have any zero.
20. Assertion: the sum and product of zeroes of quadratic polynomial are 1/4 and -1/4 then the quadratic polynomial is $4x^2+4x+1$
Reason: the quadratic polynomial whose sum and product of zeroes are given x^2-(sum of zeroes)x+ product of zeroes
21. Assertion(A) : If the zeroes of a quadratic polynomial $ax^2 + bx + c$ are both positive, then a, b and c all have the same sign.
Reason: A quadratic polynomial has at most two zeroes.
22. Assertion(A) : If the graph of a polynomial intersects the x-axis at only one point, it can be a quadratic polynomial.
Reason: A quadratic polynomial has exactly two zeroes.
23. Assertion(A) : If the graph of a polynomial intersects the x-axis at exactly two points, it need not be a quadratic polynomial.
Reason: In case quadratic polynomial has no real zeroes it will not intersect x-axis at any point.
24. Assertion(A) : The only value of k for which the quadratic polynomial $kx^2 + x + k$ has equal zeros is 1/ 2 .
Reason: In case the quadratic polynomial has equal zeroes then coefficient of x^2 and constant term will have same sign.

25. Assertion(A) : If the zeroes of the polynomial f(x) = $5x^2 - 11x - (k - 3)$ are reciprocal of each other, then k=-2
Reason: The sum of zeroes of the polynomial $ax^2 + bx + c$ *is* $-b/a$.

2 MARKS QUESTIONS

1. If the sum of zeroes of the quadratic polynomial $3x^2 – kx + 6$ is 3, then find the value of k.
2. If α and β are the zeroes of the polynomial $ax^2 + bx + c$, find the value of $\alpha^2 + \beta^2$.
3. If the sum of the zeroes of the polynomial $p(x) = (k^2 – 14)\, x^2 – 2x – 12$ is 1, then find the value of k.
4. If α and β are the zeroes of a polynomial such that α + β = -6 and αβ = 5, then find the polynomial.
5. Find the condition that zeroes of polynomial $p(x) = ax^2 + bx + c$ are reciprocal of each other.
6. Form a quadratic polynomial whose zeroes are $3 + \sqrt{2}$ and $3 – \sqrt{2}$.
7. Find a quadratic polynomial, the sum and product of whose zeroes are 0 and $-\sqrt{2}$ respectively.
8. Find the zeroes of the quadratic polynomial $\sqrt{3}\, x^2 – 8x + 4\sqrt{3}$.
9. .If the zeroes of the polynomial $x^2 + px + q$ are double in value to the zeroes of $2x^2 – 5x – 3$, find the value of p and q.
10. Find the quadratic polynomial whose zeroes are -2 and -5. Verify the relationship between zeroes and coefficients of the polynomial.
11. Find the zeroes of the quadratic polynomial $3x^2 – 75$ and verify the relationship between the zeroes and the coefficients.
12. Find the zeroes of $p(x) = 2x^2 – x – 6$ and verify the relationship of zeroes with these co-efficients.
13. Find the value of k for which the roots of the quadratic equation $2x^2+kx+8=0$, will have equal value.
14. If the sum of the zeroes of the quadratic polynomial $ky^2 + 2y – 3k$ is equal to twice their product, find the value of k
15. If one root of the quadratic polynomial $2x^2 – 3x + p$ is 3, find the other root. Also, find the value of p
16. Find the zeroes of $\sqrt{3}x^2 + 10x + 7\sqrt{3}$.
17. Find a quadratic polynomial whose zeroes are –9 and –1/9 .
18. If the sum of the zeroes of the quadratic polynomial $ky^2 + 2y – 3k$ is equal to twice their product, find the value of k
19. If the product of the zeroes of the polynomial $ax^2 – 6x – 6$ is 4, then find the value of a. Also find the sum of zeroes of the polynomial.
20. Find the zeroes of $p(x) = 4x^2 + 24x + 36$ quadratic polynomials and verify the relationship between the zeroes and their coefficients

3 MARKS QUESTIONS

1. Find a quadratic polynomial, the sum and product of whose zeroes are -8 and 12 respectively. Hence find the zeroes.
2. Find a quadratic polynomial, the sum and product of whose zeroes are 0 and −3/5 respectively. Hence find the zeroes.
3. Find the zeroes of the quadratic polynomial $6x^2 – 3 – 7x$ and verify the relationship between the zeroes and the coefficients of the polynomial.
4. Find the zeroes of the quadratic polynomial $f(x) = x^2 – 3x – 28$ and verify the relationship between the zeroes and the co-efficients of the polynomial.
5. If α and β are the zeroes of the polynomial $6y^2 – 7y + 2$, find a quadratic polynomial whose zeroes are 1/α and 1/β
6. If α and β are zeroes of $p(x) = kx^2 + 4x + 4$, such that $\alpha^2 + \beta^2 = 24$, find k.
7. If α and β are the zeroes of the polynomial $p(x) = 2x^2 + 5x + k$, satisfying the relation, $\alpha^2 + \beta^2 + \alpha\beta = 21/4$ then find the value of k.
8. If α and β are zeroes of the quadratic polynomial $4x^2 + 4x + 1$, then form a quadratic polynomial whose zeroes are 2α and 2β.
9. If α, β re zeros of quadratic polynomial $2x^2 + 5x + k$, find the value of k such that $(\alpha + \beta)^2 - \alpha\beta = 24$

10. If α, β are zeroes of polynomial $p(x) = 5x^2 + 5x + 1$ then find the value of (i) $\alpha^2 + \beta^2$ (ii) $\alpha^{-1} + \beta^{-1}$
11. If α, β are zeroes of polynomial $p(x) = 5x^2 + 5x + 1$ then find the value of $\alpha^3 + \beta^3$
12. If α and β are zereos of the polynomial $2x^2 – 5x + 7$, then find the value of $\alpha^{-1} + \beta^{-1}$.
13. If one zero of the polynomial $(a^2 + 9)x^2 + 13x + 6a$ is reciprocal of the other, find the value of a.
14. If α and β are zeroes of $x^2 + 7x + 12$, then find the value of $1/\alpha+1/\beta – 2\alpha\beta$
15. If α and β are the zeroes of a quadratic polynomial $x^2 – x – 2$ then find the value of $(1/\alpha−1/\beta)$
16. Find the quadratic polynomial whose zeroes are 1 and – 3. Verify the relation between the coefficients and the zeroes of the polynomial.
17. If p and q are the zeroes of $x^2 + px + q$, then find the values of p and q.
18. Find a relation between p and q, if one zero of $x^2 + px + q$ is 37 times the other.
19. If $p(x) = x^2 + 5x + 2$, then find p(3) + p(2) + p(0).
20. If the polynomial p(x) is divisible by (x – 4) and 2 is a zero of p(x), then write the corresponding polynomial.
21. If the zeroes of the polynomial $x^2 + px + q$ are double in value to the zeroes of $x^2 – 5x - 3$, find the value of p and q.
22. If one of the zeroes of the quadratic polynomial $f(x) = 14x^2 - 42\ k^2x - 9$ is negative of the other, find the value of 'k'.
23. If α and β are zeroes of the polynomial $p(x) = x^2 – 2x -1$, then find the value of $\frac{1}{2\alpha} + \frac{1}{2\beta} + 3\alpha\beta$.
24. If p and q are zeroes of the polynomial $p(y) = 21\ y^2 – y -2$, then find the value of (1-p).(1-q)
25. If α and β are the zeroes of the polynomial $ax^2 – x + c$. Obtain a polynomial whose zeroes are α – 3 and β – 3.

CASE STUDY BASED QUESTIONS

1. Case Study-1 : Lusitania Bridge Quadratic polynomial can be used to model the shape of many architectural structures in the world. The Lusitania Bridge is a bridge in Merida, Spain. The bridge was built over the Guadiana River in 1991 by a Spanish consortium to take the road traffic from the Romano bridge. The architect was Santiago Calatrava. The bridge takes its name from the fact that Emerita Augusta (present day Merida) was the former capital of Lusitania, an ancient Roman province.

   Based on the above information, answer the following questions.

   (i) If the Arch is represented by $10x^2 – x – 3$, then find its zeroes.

   (ii) Find the quadratic polynomial whose sum of zeroes is 0 and product of zeroes is 1.

   (iii) Find the sum and product of zeroes of the polynomial $\sqrt{3}\ x^2 – 14x + 8\sqrt{3}$

2. The figure given alongside shows the path of a diver, when she takes a jump from the diving board. Clearly it is a parabola. Annie was standing on a diving board, 48 feet above the water level. She took a dive into the pool. Her height (in feet) above the water level at any time 't' in seconds is given by the polynomial h(t) such that $h(t) = -16t^2 + 8t + k$.

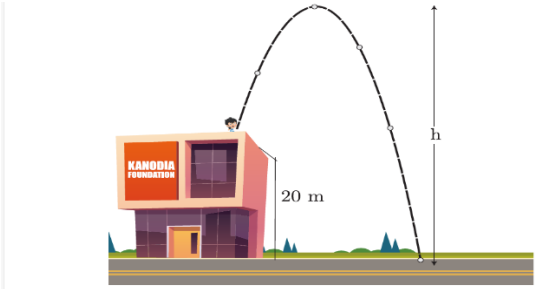
(i) What is the value of k?

(ii) At what time will she touch the water in the pool?

(iii) Rita's height (in feet) above the water level is given by another polynomial p(t) with zeroes - 1 and 2. Then find p(t)

3. Lavanya throws a ball upwards, from a rooftop, which is 20 m above from ground. It will reach a maximum height and then fall back to the ground. The height of the ball from the ground at time t is h, which is given by

   $h(t) = -4t^2 + 16t + 20$.

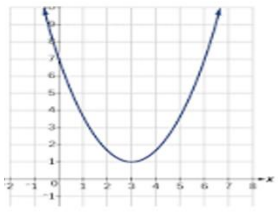


i. What is the height reached by the ball after 1 second?
ii. What is the maximum height reached by the ball?
iii. How long will the ball take to hit the ground?
iv. What are the two possible times to reach the ball at the same height of 32 m?
v. Where is the ball after 5 seconds ?

4. An barrels manufacturer can produce up to 300 barrels per day. The profit made from the sale of these barrels can be modelled by the function $P(x) = -10x^2 + 3500x - 66000$ where P(x) is the profit in rupees and x is the number of barrels made and sold.

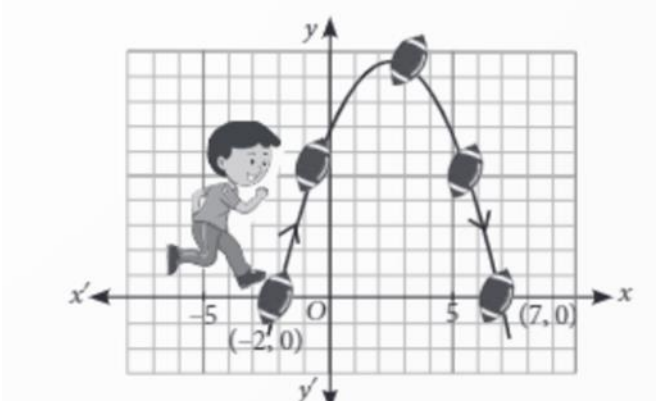
i. When no barrels are produce what is a profit loss?
ii. What is the break even point ? (Zero profit point is called break even)
iii. What is the profit/loss if 175 barrels are produced.
iv. What is the profit/loss if 400 barrels are produced.
v. What is the maximum profit which can manufacturer earn?

5. Polynomials are everywhere. It is found in a roller coaster of an amusement park, the slope of a hill, the curve of a bridge or the continuity of a mountain range. They play a key role in the study of algebra, in analysis and on the whole many mathematical problems involving them. Based on the given information, answer the following question:



i. If the roller coaster is represented by the following quadratic graph y=p(x) , then name the type of the polynomial it traces.
ii. If α and β are zeroes of polynomial $p(x)= ax^2 + bx + c$ and if it is multiplied by -3 , then what will be its new zeroes ?
iii. Write the polynomial with zeroes 2 and -3.
iv. If two numbers are such that their sum is 5 and product is 4, write a polynomial such that its zeroes are represented by these numbers.

6. In a soccer match, the path of the soccer ball in a kick is recorded as shown in the following graph.

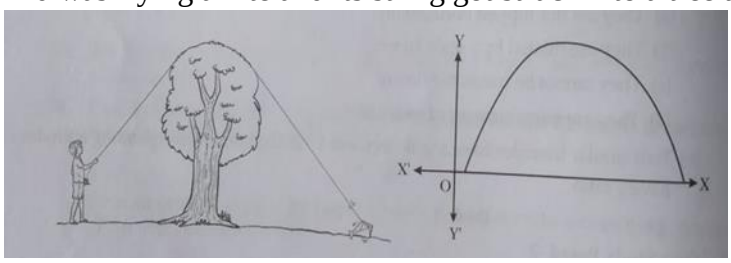


i. Find the zeroes of the polynomial represented in the following graph.

ii. For what value of 'x' the value of the polynomial f(x) =$(x-3)^2 + 9$ is 9?

iii. What is the shape of the path of the soccer ball in a given graph?

7. A child was flying a kite and its string got struck into a tree and touched ground as shown in figure.



i. Find the number of zeroes of the given graph.

ii. Find the zeroes of the polynomial $6x^2 – 3 - 7x$.

iii. If one zero of the polynomial $x^2 -12x + (3k-1)$ is five times the other, then find the value of k.

DELHI PUBLIC SCHOOL BULANDSHAHR

Holiday Homework Practice Sheet

MID- SEMESTER EXAMINATION (Session: 2025-2026)

Subject: Science **Set: A**

Class: X **Max. Marks: 50**

PHYSICS (16 marks)

Questions 1 to 6 are multiple choice questions carrying 1 mark each:

Q.1 A student placed a bottle at a distance of 20 cm in front of a convex mirror which has a focal length of 20 cm. Where is the image likely to form?

(a) at focus behind the mirror. **(b)** at focus in front of mirror.

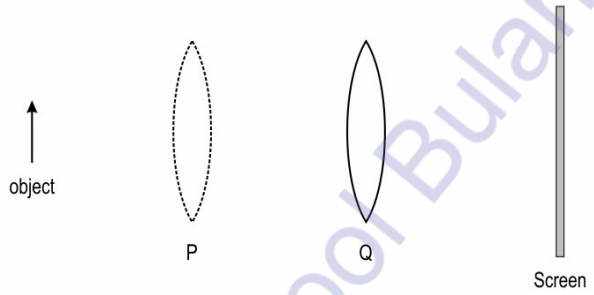
(c) at a distance of 10 cm behind the mirror. **(d)** at a distance of 10 cm in front of the mirror.

Q.2 When an incident ray of light enters a medium from air, it bends towards the normal. Which of the following is correct about the refractive index of the medium (n_m) as compared to the refractive index of air (n_a)?

(a) n_m is equal to n_a. **(b)** n_m is less than n_a.

(c) n_m is more than n_a. **(d)** None of these.

Q.3 When a lens is placed at Q, a sharp real, inverted and diminished image is formed on the screen. When the lens is moved to P, another sharp image is formed on the screen. What is the nature of the image formed when the lens is at P?



(a) magnified and inverted. **(b)** magnified and upright.

(c) diminished and upright. **(d)** diminished and inverted.

Q.4 Which of the following forms a virtual image?

(a) Plane mirror. **(b)** Convex mirror.

(c) Concave mirror. **(d)** All of these.

Questions 5 and 6 are Assertion (A) - Reason (R) questions carrying 1 mark each:

DIRECTIONS: In the following questions, a statement of Assertion is followed by a statement of Reason. Mark the correct choice as:

(a) If both Assertion and Reason are true and reason is the correct explanation of the assertion.
(b) If both Assertion and Reason are true and reason is not the correct explanation of the assertion.
(c) If assertion is true but reason is false
(d) If assertion is false and reason is true
(e) If both assertion and reason are false.

Q.5 Assertion: Plane mirror may form real image.
Reason: Plane mirror forms virtual image, if object is real.

Q.6 Assertion: An object is placed at a distance 'f/4' in front of a convex mirror of focal length 'f', its image will form at infinity.
Reason: The distance of image in convex mirror can never be infinity.

Question 7 is a very short answer type question, carrying 2 marks:

Q.7 Absolute refractive indices of two media P and Q are 1.33 (n_P) and 2.52 (n_Q) respectively. The speed of light in medium P is 2×10^8 m/s.

(a) What would be the speed of light in medium Q (v_Q)?

(b) If the angle of incidence for a ray of light travelling from medium P to medium Q is 0^o, then show with the help of a diagram what will be the path of light in the medium Q?

Question 8 is a short answer type question, carrying 3 marks:

Q.8 ***Attempt either option A or B.***

A. (i) Draw a labelled ray diagram to show the formation of a diminished image of an object by a convex mirror. Clearly mark the pole, focus and centre of curvature on the diagram.
(ii) What happens to the image when the object is moved away from the mirror gradually?
(iii) Draw diagram to show how a convex mirror can be used to give a large field of view.

OR

B. Find two positions of an object placed in front of concave mirror of focal length 20 cm, so that the image so formed is 3 times larger than the object.

Question 9 is a long answer type question, carrying 5 marks:

Q.9 Analyse the following observation table showing variation of image distance (v) with object distance (*u)* in the case of a convex lens and answer the questions that follow without doing any calculations:

S.No.	Object distance u (cm)	Image distance v (cm)
1.	-100	+25
2.	-60	+30
3.	-40	+40
4.	-30	+60
5.	-25	+100
6.	-15	+120

(i) What is the focal length of the convex Lens? Give reason to justify your answer. **(2)**
(ii) Write the serial number of the observation which is not correct. On what basis have you arrived at this conclusion? **(2)**
(iii) Select an appropriate scale and draw a ray diagram for the observation at S.No.2. **(1)**

CHEMISTRY (16 marks)

Questions 10 to 13 are multiple choice questions carrying 1 mark each:

Q.10 Which of the following is an antioxidant used in butter?
(a) BS. **(b)** BHA. **(c)** BHT. **(d)** BHR.

Q.11 Carbon monoxide reacts with Hydrogen at 340 atm to produce:
(a) Formic acid. **(b)** Methanol **(c)** Acetic acid **(d)** Propanol

Q.12 It is important to balance the chemical equations to satisfy the law of conservation of mass. Which of the following statements of the law is incorrect?
(a) The total mass of the elements present in the reactants is equal to the total mass of the elements present in the products.
(b) The number of atoms of each element remains the same, before and after a chemical reaction.
(c) The chemical composition of the reactants is the same before and after the reaction.
(d) Mass can neither be created nor can it be destroyed in a chemical reaction.

Questions 13 is an Assertion (A) - Reason (R) question carrying 1 mark:

DIRECTIONS: In the following questions, a statement of Assertion is followed by a statement of Reason. Mark the correct choice as:

(a) If both Assertion and Reason are true and reason is the correct explanation of the assertion.
(b) If both Assertion and Reason are true and reason is not the correct explanation of the assertion.
(c) If assertion is true but reason is false.
(d) If assertion is false and reason is true.
(e) If both assertion and reason are false.

Q.13 Assertion: Chips and other snacks become rancid due to oxidation.
Reason: To prevent food like chips & other snacks from oxidation, they are packed in carbon dioxide gas.

Question 14 is a very short answer type question, carrying 2 marks:

Q.14 Name one salt solution which has pH > 7 and one salt solution which has pH < 7.

Question 15 and 16 are short answer type questions, carrying 3 marks each:

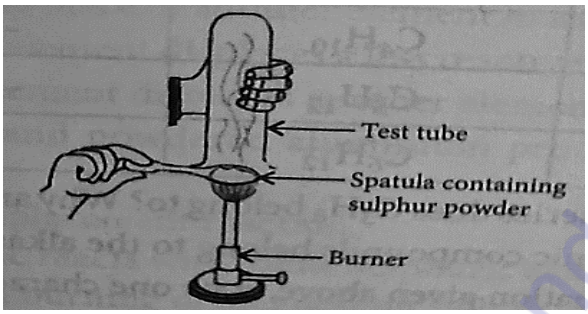
Q.15 A shining metal **M** on burning, gives a dazzling white flame and changes to a white powder **N**.

(a) Identify **M** and **N.**

(b) Represent the above reaction in the form of a balanced chemical equation.

(c) Does **M** undergo oxidation or reduction in this reaction? Justify.

Q.16 Arnab took Sulphur powder in a spatula and heated it. He collected the gas evolved by inverting a test tube over it, shown in given figure:



(a) What will be the action of gas on i) dry litmus paper; and ii) moist litmus paper?

(b) Write a balanced chemical equation for the reaction taking place.

Question 17 is a case study type question, carrying 4 marks:

Q.17 Oxidation has damaging effect on metals as well as on food. The damaging effect of oxidation on metal is studied as Corrosion and that on food is studied as. The phenomenon due to which metals are slowly eaten away by the reaction of air, water and chemicals present in atmosphere, is called Corrosion. For example, iron articles are shiny when new, but get coated with a reddish brown powder when left for some time. This process is called as rusting of iron. Rancidity is the process of slow oxidation of oil and fat present in the food materials resulting in change of smell and taste in them.

(a) Can rusting of iron take place in distilled water? Explain.

(b) The marble statues often slowly get corroded when kept in open for a long time. Assign a suitable explanation.

(c) What is **corrosion**? Why **aluminium** sheets do not corrode easily?

(d) What are the essential conditions for corrosion to take place? Why is the corrosion/rusting considered harmful to the industry?

BIOLOGY (18 marks)

Questions 18 to 23 are multiple choice questions carrying 1 mark each:

Q.18 Proteins after digestion are converted into:
(a) Carbohydrates **(b)** Small globules **(c)** Amino acids **(d)** Starch

Q.19 Respiratory pigment in human body is:
(a) Chlorophyll **(b)** Water **(c)** Blood **(d)** Hemoglobin

Q.20 The glycolysis process occurs in which part of the cell?
(a) Cytoplasm **(b)** Nucleus **(c)** Mitochondria **(d)** Chloroplast

Q.21 If salivary amylase is lacking in saliva, which of the event in the mouth will be affected:
(a) Proteins breaking down into amino acids. **(b)** Starch breaking down into sugars.
(c) Fats breaking down into fatty acids and glycerol. **(d)** Absorption of vitamins.

Questions 22 and 23 are Assertion (A) - Reason (R) questions carrying 1 mark each:

DIRECTIONS: In the following questions, a statement of Assertion is followed by a statement of Reason. Mark the correct choice as:

(a) If both Assertion and Reason are true and reason is the correct explanation of the assertion.
(b) If both Assertion and Reason are true and reason is not the correct explanation of the assertion.
(c) If assertion is true but reason is false
(d) If assertion is false and reason is true
(e) If both assertion and reason are false.

Q.22 Assertion: Ventricles have thicker walls than auricles.
Reason: Ventricles have to pump blood into various organs with great pressure.

Q.23 Assertion: Pancreatic juice digests starch, proteins and fats.
Reason: Pancreatic juice contains digestive enzymes like pancreatic amylase, trypsin and lipase.

Question 24 is a very short answer type question, carrying 2 marks:

Q.24 (a) What is the advantage of four chambers of heart?
(b) Why is diffusion insufficient to meet the oxygen requirements of multicellular organisms like humans?

Question 25 and 26 are short answer type questions, carrying 3 marks each:

Q.25 (a) In the process of respiration, state the function of alveoli.
(b) Rate of breathing in aquatic organisms is much faster than that in terrestrial organisms. Give reasons.
(c) Draw the complete pathway of the breakdown of glucose.

Q.26 List three events that occur during the process of photosynthesis in plants.

Question 27 is a case study type question, carrying 4 marks:

Q.27 Besides heart, the human circulatory system consists of a network of closed branching blood vessels and the blood that circulates continuously in all parts of the human body. The human heart is a muscular organ which is as big as our fist. It has four chambers two upper chambers called atria and two lower chambers called ventricles. The right side of the human heart is separated from the left side by a dividing wall, which is known as septum.

(a) Name the smallest blood vessel and state its role in the circulation of blood. **(1)**
(b) Write the importance of platelets in the human blood. **(1)**
(c) (i) Write in tabular form, two differences between an artery and a vein. **(2)**

OR

(ii) Why is blood circulation in the human heart called double circulation? Explain. **(2)**

DELHI PUBLIC SCHOOL BULANDSHAHR

Holiday Homework Practice Sheet

MID- SEMESTER EXAMINATION (Session: 2025-2026)

Subject: Science **Set: B**

Class: X **Max. Marks: 50**

PHYSICS (16 marks)

Questions 1 to 6 are multiple choice questions carrying 1 mark each:

Q.1 A student conducts an activity using a pencil of height 15 cm and a concave mirror, she finds that the inverted image formed is 45 cm in height. What is the magnification of the image?

(a) – 3 times **(b)** + 3 times **(c)** 1/3 times **(d)** – 1/3 times

Q.2 The speed of light in benzene is nearly 2 x 10^8 m/s, whereas the speed of light in diamond is 1.24 x 10^8 m/s. What is the refractive index of benzene with respect to diamond?

(a) 1.61 **(b)** 0 **(c)** 1 **(d)** 0.62

Q.3 The complete height of a tall building is visible entirely, when kept not very far or very close, in a small sized:

(a) Plane mirror **(b)** Convex mirror **(c)** Concave mirror **(d)** All of these

Q.4 Which amongst the following is **NOT** an application of convex mirror?

(a) In parking lots around blind corners. **(b)** Rear view mirror in vehicles.

(c) Headlight mirror in vehicles. **(d)** In ATMs for security purposes.

Questions 5 and 6 are Assertion (A) - Reason (R) questions carrying 1 mark each:

DIRECTIONS: In the following questions, a statement of Assertion is followed by a statement of Reason. Mark the correct choice as:

(a) If both Assertion and Reason are true and reason is the correct explanation of the assertion.
(b) If both Assertion and Reason are true and reason is not the correct explanation of the assertion.
(c) If assertion is true but reason is false
(d) If assertion is false and reason is true
(e) If both assertion and reason are false.

Q.5 Assertion: The focal length of the convex mirror will increase, if the mirror is placed in water.
Reason: The focal length of a convex mirror of radius R is equal to, f = R/2.

Q.6 Assertion: A spherical mirror of low curvature has a long focal length.
Reason: A low curvature spherical mirror is cut from a sphere having short radius of curvature.

Question 7 is a very short answer type question, carrying 2 marks:

Q.7 For a convex mirror, the image distance is 5 cm, focal length is 10 cm, and height of the image is 7.5 cm. State the given information with appropriate symbols and represent it according to sign convention. Also, find the object distance and height of the object.

Question 8 is a short answer type question, carrying 3 marks:

Q.8 ***Attempt either option A or B.***

A. (i) For the same angle of incidence 45°, the angle of refraction in two transparent media; I and II is 20° and 30° respectively. Out of media I and II, which medium is optically denser and why?

(ii) If an incident ray of light of wavelength 4500 Å in air enters a glass slab of refractive index 1.5, then find:

(a) Speed of light in glass slab.
(b) Wavelength of light in glass slab.
(c) Frequency of light in glass slab.

.

OR

B. State the laws of refraction of light. Explain the term 'relative refractive index of two media' and write an expression to relate it with the speed of light in vacuum.

Question 9 is a long answer type question, carrying 5 marks:

Q.9 A student holding a mirror in his hand directed the reflecting surface of the mirror towards the Sun. Then he directed the reflected light on to a sheet of paper held close to the mirror.
(a) What type of mirror is he holding? **(1)**
(b) What should he do to burn the paper? **(1)**
(c) State the nature and size of the image obtained on the paper? **(1)**
(d) Will he be able to determine the approximate value of the focal length of this mirror from this activity? Give a reason and draw a ray diagram to justify your answer in this case. (2)

CHEMISTRY (16 marks)

Questions 10 to 13 are multiple choice questions carrying 1 mark each:

Q.10 When Zinc reacts with hydrochloric acid, the products formed are:

(a) $ZnCl_2$ and H_2 **(b)** $ZnCl_2$ and O_2 **(c)** Zn and H_2 **(d)** Zn and O_2

Q.11 Which of the following is used to neutralise the acidity in bee sting?

(a) Lemon Juice **(b)** Vinegar **(c)** Baking Soda **(d)** Sodium hydroxide

Q.12 Which of the following statements is correct about an aqueous solution of an acid?

(a) It turns blue litmus red **(b)** It conducts electricity

(c) It has pH less than 7. **(d)** All of the above.

Questions 13 is an Assertion (A) - Reason (R) question carrying 1 mark:

DIRECTIONS: In the following questions, a statement of Assertion is followed by a statement of Reason. Mark the correct choice as:

- **(a)** If both Assertion and Reason are true and reason is the correct explanation of the assertion.
- **(b)** If both Assertion and Reason are true and reason is not the correct explanation of the assertion.
- **(c)** If assertion is true but reason is false.
- **(d)** If assertion is false and reason is true.
- **(e)** If both assertion and reason are false.

Q.13 Assertion: Ammonium chloride is an acidic salt.
Reason: It is formed by a strong acid and a weak base.

Question 14 is a very short answer type question, carrying 2 marks:
Q.14 Define a redox reaction. Identify the oxidised and reduced substances in the following reactions:

$$\mathbf{CuO + H_2 \rightarrow Cu + H_2O}$$

Question 15 and 16 are short answer type questions, carrying 3 marks each:
Q.15 Give reason for the following:

(a) Oil and fat containing food items are flushed with nitrogen.

(b) Copper vessel lose their shine after a few days.

(c) Ferrous sulphate crystals lose colour on heating.

Q.16 Why does dry HCl gas not turns blue litmus red, while aqueous HCl does? Explain with chemical reasoning. Also write an equation for the reaction of HCl in water.

Question 17 is a case study type question, carrying 4 marks:

Q.17 Ravi was provided with three colourless liquids labelled X, Y, and Z. He tested each with red and blue litmus, phenolphthalein, and methyl orange. The results were:

Sample	Litmus (R/B)	Phenolphthalein	Methyl Orange
X	R→B	Pink	Yellow
Y	No change	No change	orange
Z	B→R	Colourless	Red

Answer the following:

(a) Identify X, Y, and Z as acid, base, or neutral. **(1)**

(b) Which sample has the highest concentration of OH^- ions? **(1)**

(c) (i) Write the ionization equation of the acid identified. **(2)**

OR

(ii) Which indicator(s) showed a similar result for acid and neutral? **(2)**

BIOLOGY (18 marks)

Questions 18 to 23 are multiple choice questions carrying 1 mark each:

Q.18 The inner lining of stomach is protected from hydrochloric acid by:

(a) Bile **(b)** Pepsin **(c)** Mucus **(d)** Saliva

Q.19 Which one of the following molecules is produced initially when glucose breaks down in the cytoplasm of a cell in aerobic as well as anaerobic respiration?

(a) Lactic acid **(b)** Carbon dioxide **(c)** Ethanol **(d)** Pyruvate

Q.20 In amoeba, food is digested in the:

(a) Food vacuole **(b)** Mitochondria **(c)** Pseudopodia **(d)** Chloroplast

Q.21 As compared to daytime, the amount of carbon dioxide released by the plants during night is more because:

(a) It is not produced during daytime.

(b) It is stored in the leaves of plants during daytime.

(c) Major amount of carbon dioxide produced is used up for photosynthesis during daytime.

(d) Plants do not respire during daytime.

Questions 22 and 23 are Assertion (A) - Reason (R) questions carrying 1 mark each:

DIRECTIONS: In the following questions, a statement of Assertion is followed by a statement of Reason. Mark the correct choice as:

(a) If both Assertion and Reason are true and reason is the correct explanation of the assertion.
(b) If both Assertion and Reason are true and reason is not the correct explanation of the assertion.
(c) If assertion is true but reason is false
(d) If assertion is false and reason is true
(e) If both assertion and reason are false.

Q.22 Assertion: The inner walls of the small intestine have finger like projections called villi which are rich in blood.

Reason: These villi have a large surface area to help the small intestine in completing the digestion of food.

Q.23 Assertion: Human heart is four-chambered.

Reason: Vena cava is the only artery that supplies deoxygenated blood to the heart.

Question 24 is a very short answer type question, carrying 2 marks:

Q.24 (a) Give the structure and function of alveoli in human respiratory system.

(b) What is meant by residual volume of air in the lungs?

Question 25 and 26 are short answer type questions, carrying 3 marks each:

Q.25 What is photosynthesis? Name the organelle and the organs in which photosynthesis takes place. During this process where does the liberated oxygen come from? What happens to the carbohydrates which are not immediately used by the plant?

Q.26 (a) Draw a diagram to show open stomatal pore and label on it:

(i) guard cells

(ii) chloroplast

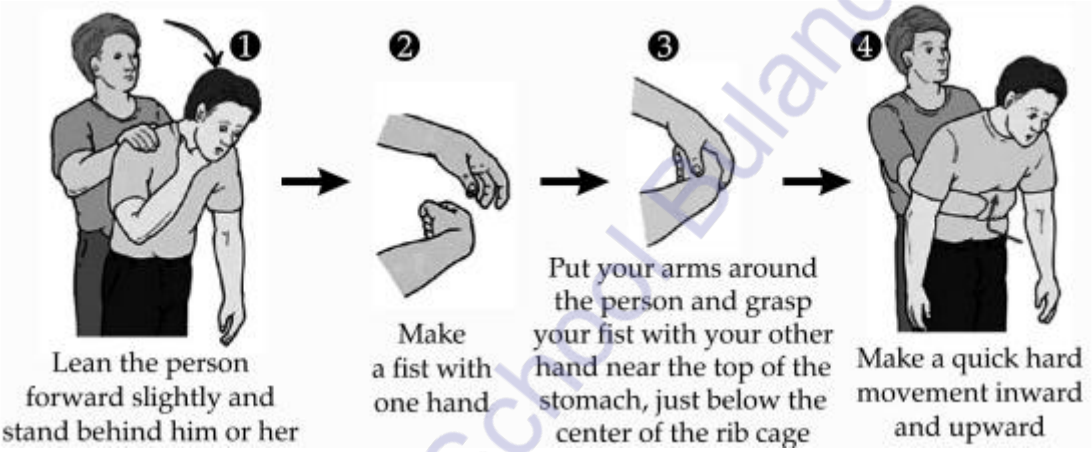
(b) State two functions of stomata.

Question 27 is a case study type question, carrying 4 marks:

Q.27 Respiration is a process in living organisms involving the production of energy, typically with the intake of oxygen and the release of carbon dioxide from the oxidation of complex organic substances, i.e.,

(i) Gaseous exchange: Intake of oxygen from the atmosphere and release of carbon-dioxide.

(ii) Breakdown of simple food in order to release energy inside the Cellular Respiration.



(i) A person can choke when a piece of food becomes lodged in the windpipe, blocking the flow of air. A first aid procedure to remove the blockage is the Heimlich manoeuvre described above, by performing this procedure, the piece of food is pushed out of the windpipe. Which of the following causes this to happen?

(a) The expansion of the chest. **(b)** The air pressed out of the chest

(c) The food pressed out of the stomach **(d)** The upward movement of the wall of the food pipe

(ii) In humans, the life processes are controlled and regulated by:

(a) reproductive and endocrine system **(b)** respiratory and nervous system

(c) endocrine and digestive system **(d)** nervous and endocrine system

(iii) Define aerobic respiration.

(iv) Define the process of anaerobic respiration.

DELHI PUBLIC SCHOOL BULANDSHAHR

Previous Year AISSE (Board) Questions
(Covering Mid-Sem Exam syllabus)

Subject: Physics **Class: X**

2020

Q.1 An object 4 cm in size, is placed 25 cm in front of a concave mirror of focal length 15 cm.

(i) At what distance from the mirror should a screen be placed in order to obtain a sharp image?

(ii) Find the size of the image.

(iii) Draw a ray diagram to show the formation of image in this case.

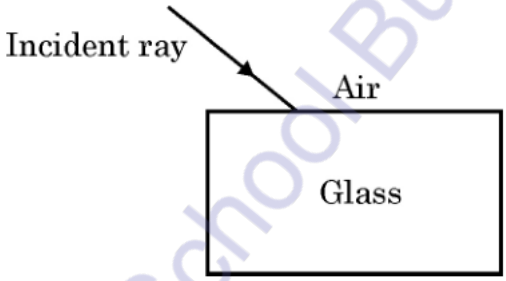
Q.2 What happens after refraction, when:

(i) a ray of light parallel to the principal axis passes through a concave lens?

(ii) a ray of light falls on a convex lens while passing through its principal focus ?

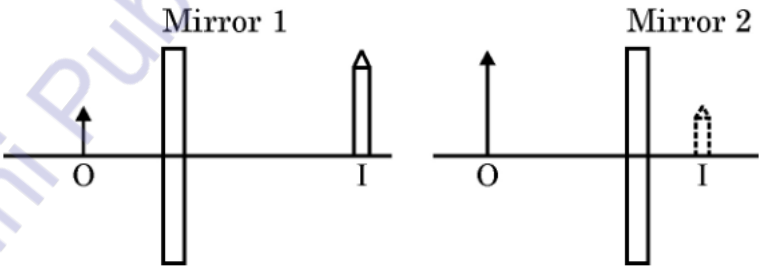
(iii) a ray of light passes through the optical centre of a convex lens ?

Q.3 (a) Draw and complete the following ray diagram on you answer sheet to show lateral displacement.



(b) Define absolute refractive index. Give its mathematical expression.

(c) Study the following diagrams:



I = Image, O = Object

Identify Mirror 1 and Mirror 2 and state one use of each.

Q.4 (a) Water has refractive index 1.33 and alcohol has refractive index 1.36. Which of the two medium is optically denser? Give reason for your answer.

(b) Draw a ray diagram to show the path of a ray of light passing obliquely from water to alcohol.

(c) State the relationship between angle of incidence and angle of refraction in the above case.

Q.5 (a) A security mirror used in a big showroom has radius of curvature 5 m. If a customer is standing at a distance of 20 m from the cash counter, find the position, nature and size of the image formed in the security mirror.

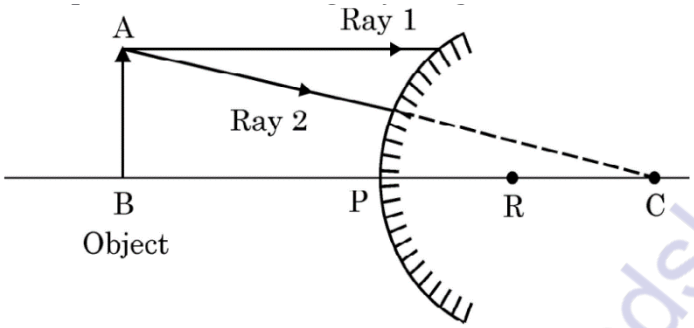
(b) Neha visited a dentist in his clinic. She observed that the dentist was holding an instrument fitted with a mirror. State the nature of this mirror and reason for its use in the instrument used by dentist.

2022

Physics questions only cover two topics, viz. Electricity and Magnetic Effects of Electric Current.

2023

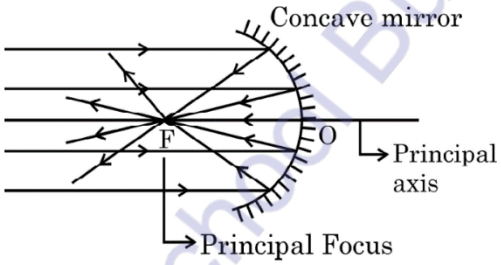
Q.1 (a) Complete the following ray diagram to show the formation of image:



(b) Mention the nature, position and size of the image formed in this case.

(c) State the sign of the image distance in this case using the Cartesian sign convention.

Q.2



(a) List two applications of concave mirror.
(b) If the distance between the mirror and the principal focus is 15 cm, find the radius of curvature of the mirror.
(c) Draw a ray diagram to show the type of image formed when an object is placed between pole and focus of a concave mirror.
(d) An object 10 cm in size is placed at 100 cm in front of a concave mirror. If its image is formed at the same point where the object is located, find:
(i) Focal length of the mirror, and
(ii) Magnification of the image formed with sign as per Cartesian sign convention.

Q.3 A student has focused the image of an object of height 3 cm on a white screen using a concave mirror of focal length 12 cm. If the distance of the object from the mirror is 18 cm, find the values of the following:

(i) Distance of the image from the mirror

(ii) Height of the image

Q.4 (a) Name the type of mirror that should be used to obtain the following types of images:

(i) A magnified and virtual image of an object

(ii) A diminished and virtual image of an object

(b) Draw labelled ray diagrams to justify your answers in each case mentioned above.

(c) Which of these mirrors can also be used to obtain a magnified and real image of an object? State the position of the object in this case.

Q.5 The magnification produced when an object is placed at a distance of 20 cm from a spherical mirror is +1/2. Where should the object be placed to reduce the magnification to +1/3?

2024

Q.1 An object is placed at a distance of 10 cm from a convex mirror of focal length 15 cm. Find the position of the image formed by the mirror.

Q.2 An object is placed in front of a concave mirror of focal length 12 cm. If distance of the object from the pole of the mirror is 8 cm, then use mirror formula to determine the position of the image formed. Draw a labelled ray diagram to justify your answer in this case.

Q.3 (i) The image of an object formed by a mirror is real, inverted is of magnification – 1. If the image is at a distance of 30 cm from the mirror, where is the object placed? Give reason to justify your answer.

(ii) Where would the image be if the object is moved 15 cm towards the mirror? Draw ray diagram for the new position of the object to justify your answer.

Q.4 Draw a ray diagram to show the path of the refracted ray in each of the following cases:

A ray of light incident on a concave lens

(a) parallel to its principal axis, and

(b) is directed towards its principal focus.

Q.5 (i) Draw a ray diagram to show the path of the reflected ray in each of the following cases:

A ray of light incident on a convex mirror

(a) parallel to its principal axis, and

(b) is directed towards its principal focus

(ii) A 1.5 cm tall candle is placed perpendicular to the principal axis of a concave mirror of focal length 12 cm. If the distance of the candle base from the pole of the mirror is 18 cm, use mirror formula to determine the position and size of the image formed.

2025

Q.1 Mirror 'X' is used to concentrate sunlight in solar furnace and Mirror 'Y' is fitted on the side of the vehicle to see the traffic behind the driver. Which of the following statements are true for the two mirrors?

(i) The image formed by mirror 'X' is real, diminished and at its focus.

(ii) The image formed by mirror 'Y' is virtual, diminished and erect.

(iii) The image formed by mirror 'X' is virtual, diminished and erect.

(iv) The image formed by mirror 'Y' is real, diminished and at its focus.

(A) (i) and (ii) **(B)** (ii) and (iii) **(C)** (iii) and (iv) **(D)** (i) and (iv)

Q.2 Draw ray diagrams to show the nature, position and relative size of the image formed by a convex mirror when the object is placed (i) at infinity and (ii) between infinity and pole P of the mirror.

Q.3 (i) If the absolute refractive indices of two media X and Y are 6/5 and 4/3 respectively, then what is the refractive index of Y with respect to X?

(ii) An object is placed at a distance of 30 cm from the pole of a concave mirror. If its real and inverted image is formed at 60 cm in front of the mirror, what is the focal length of the mirror?

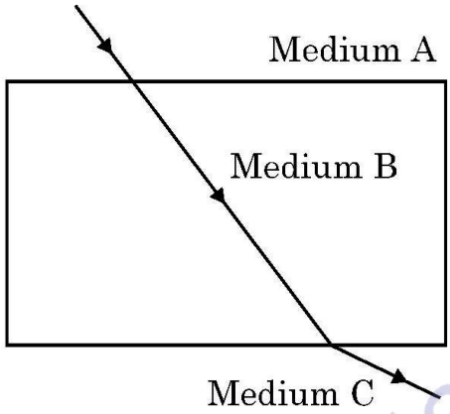
Q.4 (a) Out of the two lenses, one concave and the other convex, state which one will diverge a parallel beam of light falling on it. Draw a ray diagram to show the principal focus of the lens.

(b) A ray of light after refraction from a convex lens emerges parallel to its principal axis.

(i) Draw a labelled ray diagram to show it.

(ii) In this case, the incident ray before refraction from the lens passes through a point on its principal axis. Name the point.

Q.5 (a) Observe the following diagram and compare (i) speed of light and (ii) optical densities of the three media A, B and C. Also, give justification for your answer of any one of the two cases in terms of refractive indices A, B and C.



(b) Redraw the path of light through the three media, if the ray of light starting from medium A falls on the medium B

(i) Obliquely and the optical density of medium B is made more than that of A and C.

(ii) The ray falls normally from medium A to medium B.

DELHI PUBLIC SCHOOL BULANDSHAHR

Previous Year AISSE (Board) Questions
(Covering Mid-Sem Exam syllabus)

Subject: Chemistry **Class: X**

2020

1. Calcium oxide reacts vigorously with water to produce slaked lime:

$CaO(s) + H_2O(l) \rightarrow Ca(OH)_2$

This reaction can be classified as:

(A) Combination reaction (B) Exothermic reaction (C) Endothermic reaction (D) Oxidation reaction

Which of the following is the correct option?

(a) A and C (b) C and D (c) A, C and D (d) A and B

2. When hydrogen sulphide gas is passed through a blue solution of copper sulphate, a black precipitate of copper sulphide is obtained and the sulphuric acid so formed remains in the solution. The reaction is an example of-

(a) Combination reaction (b) Displacement reaction (c) Decomposition Reaction (d) Double displacement reaction.

3.1g of copper powder was taken in a china dish and heated. What change takes place on heating? When hydrogen gas is passed over this heated substance a visible change is seen in it.Give the chemical equation of reactions, name the product and also its color.

4. Identify the type of reaction taking place in each of the following cases and write the balanced chemical equation for the reactions;

(a) Zinc reacts with silver nitrate to produce zinc nitrate and silver.

(b) Potassium iodide reacts with lead nitrate to produce potassium nitrate and lead iodide.

2022

5. 2 g of silver chloride is taken in china dish and the dish is placed in sunlight for some time. What will be your observation in this case? Write the chemical reaction involved in the form of balanced chemical equation. Identify the type of chemical reaction.

6. What is observed when 2ml of dilute hydrochloric acid is added to 1g of sodium carbonate taken in a clean and dry test tube? Write chemical equation for the reaction.

7. What is observed when solution if sodium sulphate is added to solution of barium chloride taken in test tube? Write the chemical equation for the chemical reaction involved and state the type of reaction.

8. Identify the reducing agent in terms of gain or loss of oxygen.

(i) $4NH_3 + 5O_2 \rightarrow 4NO + 6H_2O$

(ii) $H2O + F_2 \rightarrow HF + HOF$

(iii) $Fe_2O_3 + 3CO \rightarrow 2Fe + 3CO_2$

2023

9. Suggest one remedial measure each to counteract the change in pH in human beings in following cases:

(i) Production of too much acid in stomach

(ii) Stung by honey bee /nettle leaves

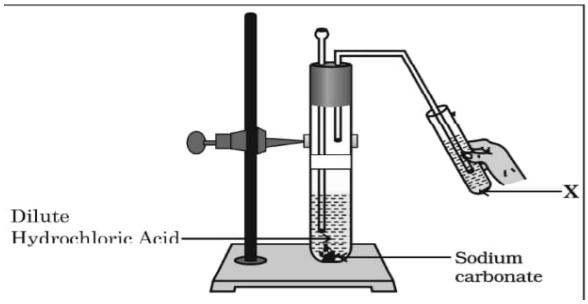
(iii) Fresh milk has a ph 6.When it changes into curd will its pH increase or decrease? Why?

10. $MnO_2 + xHCl \rightarrow MnCl_2 + y\ H_2O + zCl_2$

In order to balance the above chemical equation, the values of x, y and z respectively are:

(a) 6,2,2 (b) 4,1,2 (c) 4,2,1 (d) 2,2,1

11. In the experimental set up given below ,it is observed that on passing the gas produced in the reaction in the solution X the solution X first turns milky then colorless.



The option that justifies the above stated observation is that X is aqueous calcium hydroxide and

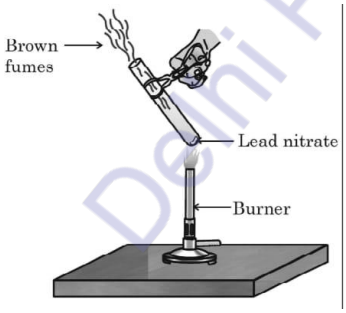
(i) it turns milky due to carbon dioxide gas liberated in the reaction and after sometime it becomes colorless due to formation of calcium carbonate.

(ii) it turns milky due to formation of calcium carbonate and on passing excess of carbon dioxide it becomes colorless due to formation of calcium hydrogen carbonate which is soluble in water

(iii) it turns milky due to passing of carbon dioxide through it. It turns colorless as on further passing carbon dioxide sodium hydrogen carbonate is formed which is soluble in water.

(iv) The carbon dioxide liberated during the reaction turns lime water milky due to formation of calcium hydrogen carbonate and after sometime it turns colorless due to formation of calcium carbonate which is soluble in water.

12. The emission of brown fumes in the given experimental setup is due to-



(a) Thermal decomposition of lead nitrate which produces brown fumes of nitrogen dioxide.

(b) Thermal decomposition of lead nitrate which produces brown fumes of lead oxide

(c) Oxidation of lead nitrate forming lead oxide and nitrogen dioxide

(d) Oxidation of lead nitrate forming lead oxide and oxygen.

2024

13. Write one chemical equation each for the chemical reaction in which the following have taken place:

(i) Change in color

(ii) Change in temperature

(iii) Formation of precipitate

Mention color change/temperature change /compound precipitated along with equation.

14. (i) The pH of a sample of tomato juice is 4.6.How is this juice likely to be in taste? Give reason to justify your answer.

(ii) How do we differentiate between a strong acid and a weak base in terms of ion formation inaqueous solution?

(iii) The acid rain can make the survival of aquatic animals difficult. How?

15. When 2ml of sodium hydroxide solution is added to few pieces of granulated zinc in a test tube and then warmed the reaction that occurs can be written in the form of balanced chemical equation as:

(a) $NaOH + Zn \rightarrow NaZnO_2 + H_2O$

(b) $2NaOH + Zn \rightarrow Na_2ZnO_2 + H_2$

(c) $2NaOH + Zn \rightarrow NaZnO_2 + H_2$

(d) $2NaOH + Zn \rightarrow Na_2ZnO_2 + H_2O$

16. Select from the following a decomposition reaction in which source of energy for decomposition is light:

(a) $2FeSO_4 \rightarrow Fe_2O_3 + SO_2 + SO_3$

(b) $2H_2O \rightarrow 2H_2 + O_2$

(C) $2AgBr \rightarrow 2Ag + Br_2$

(d) $CaCO_3 \rightarrow CaO + CO_2$

17. $MnO_2 + 4HCl \rightarrow MnCl_2 + 2H_2O + Cl_2$

The reaction given above is redox because in this case:

(a) MnO_2 is oxidized and HCl is reduced

(b) HCl is oxidized.

(c) MnO_2 is reduced

(d) MnO_2 is reduced and HCl is oxidized.

DELHI PUBLIC SCHOOL BULANDSHAHR

Previous Year AISSE (Board) Questions

(Covering Mid-Sem Exam syllabus)

Subject: BIOLOGY **Class: X**

CBSE10th Board Science Question Paper 2024

20. Assertion (A) : The rate of breathing in aquatic organisms is much faster than in terrestrial organisms.

Reason (R): The amount of oxygen dissolved in water is very high as compared to the amount of oxygen in air.

(B) Name one directional growth movement each in response to chemicals and water in plants. Write an example for each of them.

22. (i) Give reason why herbivorous animals have longer, small intestine than carnivorous animals ?

23. (ii) Although 'Pepsin' and 'Trypsin' are both protein digesting enzymes,what is the difference between them?

Which organisms have a three-chambered heart? Why do they have three-chambered hearts? (ii) List two functions of lymph.

CBSE10th Board Science Question Paper 2024

1. The breakdown of glucose has taken the following pathway : Glucose (a) ——→ Pyruvate + Energy (b) ——→ Lactic acid + Energy The sites ‘a’ and ‘b’ respectively are :

(A) Mitochondria and Oxygen deficient muscle cells

(B) Cytoplasm and Oxygen rich muscle cells

(C) Cytoplasm and Yeast cells

(D) Cytoplasm and Oxygen deficient muscle cells

2.The opening and closing of stomata is regulated by :

(A) CO_2 concentration in stomata

(B) Temperature in guard cells

(C) O_2 concentration in stomata

(D) Amount of water in guard cells

3. (a) (i) “The length of the small intestine in various animals depends on the food they eat.” Justify the statement.
4 . Discuss the role of the pancreas and bile juice in the digestion of food in human beings.

5. How is the small intestine designed to absorb digested food ?

OR State the role of rings of cartilage present in the throat.

Discuss the role of the ribs and diaphragm when air is taken in during the breathing cycle.

Why do we get muscle cramps during heavy exercise ? Explain.

DELHI PUBLIC SCHOOL, BULANDSHAHR

Holiday Homework (Session: 2025-2026)
Subject: Social Science (087)
Class: X **Max. Marks: 50**

SECTION – A (History/ Political Science)

Multiple Choice Question (MCQs) – **1x4= 4**

1. Arrange the following events in chronological order and choose the correct option.
i. A custom union Zollverein introduced by Prussia
ii. Giuseppe Mazzini exiled for attempting a revolution in Liguria
iii. Beginning of the Greek war of independence
iv. Founding of Young Europe in Berne by Giuseppe Mazzini

a. iii, iv, ii and i
b. iii, ii, iv and i
c. iii, i, iv and ii
d. iii, i, iv and ii

2. Which of the given pairs is/ are **incorrectly** matched?

i. Forests – Concurrent List
ii. Agriculture – Union List
iii. Irrigation – State List
iv. Commerce – Concurrent List
a. i & iii
b. ii & iii
c. i & iv
d. ii & iv

3. Assertion (A) – The minority French – speaking community was relatively rich and powerful in Brussels.
Reason (R) – The tension between the two communities was more acute in Brussels.
a. Both A and R are true and R is the correct explanation of A.
b. Both A and R are true and R is not the correct explanation of A.
c. A is true but R is false.
d. A is false but R is true.

4. Which among the following statements with regard to unitary government is incorrect?
a. There is a single government for the entire country.
b. The Central Government cannot pass on order to the State governments.
c. State Governments are answerable to the people.
d. In case of more than one level of governments, sub units are subordinate to central authority.

5. Read the source given below and answer the following questions- **4**

The first upheaval took place in France in July 1830. The Bourbon kings who had been restored to power during the conservative reaction after 1815, were now overthrown by liberal revolutionaries who installed a constitutional monarchy with Louis Philippe at its head. 'When France sneezes,' Metternich once remarked, 'the rest of Europe catches cold.' The July Revolution sparked an uprising in Brussels which led to Belgium breaking away from the United Kingdom of the Netherlands.

An event that mobilised nationalist feelings among the educated elite across Europe was the Greek war of independence. Greece had been part of the Ottoman Empire since the fifteenth century. The growth of revolutionary nationalism in Europe sparked off a struggle for independence amongst the Greeks which began in 1821. Nationalists in Greece got support from other Greeks living in exile and also from many West Europeans who had sympathies for ancient Greek culture. Poets and artists lauded Greece as the cradle of European civilisation and mobilised public opinion to support its struggle against a Muslim empire. The English poet Lord Byron organised funds and later went to fight in the war, where

he died of fever in 1824. Finally, the Treaty of Constantinople of 1832 recognised Greece as an independent nation.

5.1 By which treaty Greece emerged as an independent nation? 1
5.2 Why did the other people from West Europe support for the independence of Greece? 1
5.3 Who commented, "When France sneezes, the rest of Europe catches cold?" What did he mean? 2

6. Read the source given below and answer the following questions- 4

The federal system thus has dual objectives: to safeguard and promote unity of the country, while at the same time accommodate regional diversity. Therefore, two aspects are crucial for the institutions and practice of federalism. Governments at different levels should agree to some rules of power-sharing. They should also trust that each would abide by its part of the agreement.

The exact balance of power between the central and the state government varies from one federation to another. This balance depends mainly on the historical context in which the federation was formed. There are two kinds of routes through which federations have been formed. The first route involves independent States coming together on their own to form a bigger unit, so that by pooling sovereignty and retaining identity they can increase their security. This type of 'coming together' federations include the USA, Switzerland and Australia. In this first category of federations, all the constituent States usually have equal power and are strong vis-à-vis the federal government.

The second route is where a large country decides to divide its power between the constituent States and the national government. India, Spain and Belgium are examples of this kind of 'holding together' federations. In this second category, the central government tends to be more powerful vis-à-vis the States. Very often different constituent units of the federation have unequal powers. Some units are granted special powers.

6.1 In which type of federation, the distribution of power sharing is unequal between Central Government and State Governments? 1
6.2 What is an ideal federal system? 1
6.3 State the two objectives of federal system. 2

Very Short Answer Type Questions- 2×1=2

7. Differentiate between horizontal and vertical distribution of power sharing. 2

Short Answer Type Questions- 3×2=6

8. "Language too played an important role in developing nationalist sentiments in Europe." Explain. 3
9. State the main elements of the power sharing model evolved in Belgium. 3

Long Answer Type Questions - 5×1=5

10. Highlight any five features of Civil Code of 1804.

SECTION – B (ECONOMICS)

Multiple Choice Question (MCQs) – 1x4= 4

1. What the countries with per capita income of US $49,300 per annum and above (in 2019) are called?

a. Rich countries
b. Low-income countries
c. Developing countries
d. None of the above

2. Which of the following is NOT an attribute to compare countries development?

a. Education b. Health c. Export Import d. Income

3. 'Kerala has low infant mortality rate'. Which of the following is appropriate reason for the same?
a. It has adequate provision of basic health and educational facilities.
b. It has highest per capital income in India.
c. It has many natural resources
d. both a and b

4. Which of the following is an activity of primary sector?

a. Communication b. Mining
c. Insurance d. Transportation

Very Short Answer Type Questions- **2×1=2**

5. Write any two differences between primary and secondary sector? 2

Short Answer Type Questions- **3×2=6**

6. Write any three characteristics of development? 3

7. What do you understand by the sustainability of development? Explain with examples how is it important?
. 3

SECTION – C (GEOGRAPHY)

Multiple choice questions: **3x1=3**

1. Assertion: Agenda 21 was signed in 1992 in Rio de Janeiro.
Reason: Sustainable Development focused on utilization of resources.

a. Both A and R are true and R is the correct explanation of A.
b. Both A and R are true and R is not the correct explanation of A.
c. A is true but R is false.
d. A is false but R is true.

2. The forest cover in our country has recently increased due to:
a. Increase in natural forest growth
b. Increase in Net Sown Area
c. Plantation by different agencies
d. None of the above

3. Identify the wrong statement among the following.

a. The soil is a living system.
b. It takes millions of years to form soil up to a few cm in depth.
c. Soil consists both organic and inorganic materials.
d. Soil is the most important non-renewable natural resource.

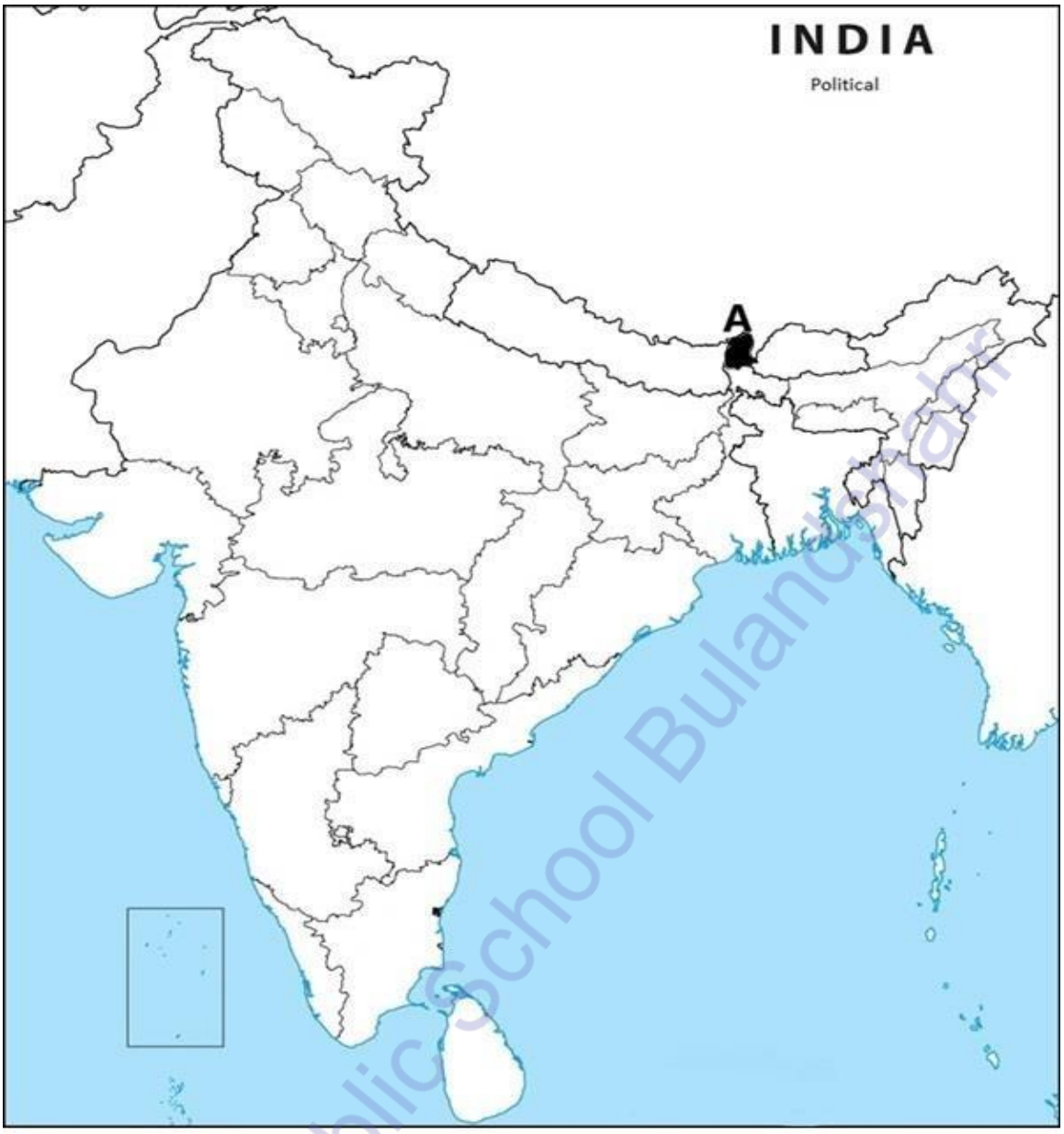
4. In which year Wildlife Protection act was implemented? Why? 2

5. What role have different communities played in protection of forest in India? Highlight any three points. 3

6. What is leaching? Write any two features of soil formed by the process of leaching. 3

7. Map Work – **1+1=2**

a. Identify the soil marked as **A**.
b. Mark the desert soil on the map of India.



PREVIOUS YEARS QUESTION PAPERS

Multiple Choice Question (MCQs) –

Two statements are given below. They are Assertion (A) and Reason (R). Read both the statements and choose the correct option:

1. Assertion (A) – On Prussian initiative 'Zollverein' custom union was formed.
Reason (R) – It was to create unified economic territory allowing the unhindered movement of goods, people and capital. (2024)

a. Both A and R are true and R is the correct explanation of A.
b. Both A and R are true and R is not the correct explanation of A.
c. A is true but R is false.
d. A is false but R is true.

2. Match the following- **(2024)**

Column A	**Column B**
A. Union List	i Trade Union
B. State List.	ii Banking
C. Concurrent List	iii Police
D. Residuary List	iv Internet

a. A-iv, B-i, C-iii, D-ii
b. A-ii, B-iii, C-i, D-iv
c. A-i, B-ii, C-iv, D-iii
d. A-iii, B-iv, C-ii, D-i

Very Short Answer Type Questions-

3. How does the United Nations Development Program's (UNDP's) developmental criterion differ from World Bank? Explain. (2024)

Short Answer Type Questions-

4. Explain the functioning of Conservative regimes in France in 1815. (2025)

Long Answer Type Questions –

5. Explain the various stages of resource planning and its need in India. (2025)

6. Read the source given below and answer the following questions- (2024)

Nature worship is an age old tribal belief based on the premise that all creations of nature have to be protected. Such beliefs have preserved several virgin forests in pristine form called Sacred Groves (the forests of God and Goddesses). These patches of forest or parts of large forests have been left untouched by the local people and any interference with them is banned.

Certain societies revere a particular tree which they have preserved from time immemorial. The Mundas and the Santhal of Chota Nagpur region worship mahua (Bassia latifolia) and kadamba (Anthocaphalus cadamba) trees, and the tribals of Odisha and Bihar worship the tamarind (Tamarindus indica) and mango (Mangifera indica) trees during weddings. To many of us, peepal and banyan trees are considered sacred.

Indian society comprises several cultures, each with its own set of traditional methods of conserving nature and its creations. Sacred qualities are often ascribed to springs, mountain peaks, plants and animals which are closely protected. You will find troops of macaques and langurs around many temples. They are fed daily and treated as a part of temple devotees. In and around Bishnoi villages in Rajasthan, herds of blackbuck, (chinkara), nilgai and peacocks can be seen as an integral part of the community and

nobody harms them.

6.1 How does sacred groves relate to the belief in nature worship?
6.2 How do communities incorporate trees into their cultural practices?
6.3 Explain the cultural values that contribute to the coexistence of nature.

DELHI PUBLIC SCHOOL, BULANDSHAHR

Mid Semester Practice Sheet (Session:2025-2026)
Subject: Information Technology(402)
Class: X

Q1. Answer the following questions in Fair Notebook:

1. What is a database? Write its significance.
2. Write basic features of LibreOffice Base.
3. What are the steps involved in designing a database?
4. What are the advantages of DBMS over normal file system?
5. What is the need of setting relationship between tables?
6. What is role of a query and a Form?
7. Explain the Data Models available in Base.
8. What are the components of a Base Window?
9. What are the two ways available in Base to create tables? Explain.
10. How will you set a Primary Key in a table?
11. What are the different Number Data types?
12. Name 4 properties of a field.
13. Write four data types of Text.
14. What is the role of Entry Required and Default Value property of Base?
15. What is data validation? Why is it required?
16. What types of values are stored in BOOLEAN data type?
17. What is an Auto number field?
18. What is the significance of Null values in Base?
19. What do you understand by default value? How can you set a default value for a field?
20. Write steps to delete a record from a table?
21. Write the three types of relationships available in Base.
22. Explain one to many relationship.
23. What do you know about referential integrity?
24. What are the conditions for referential integrity?
25. What major steps are to be followed to create Query?
26. What do you mean by criterion in a query?
27. How do we specify multiple conditions in a query?
28. Grouping of data in a query requires two things. What are they?
29. Name four most common aggregate functions used in Base query?
30. What is the difference between a summary and a detailed query?
31. What is the utility of a query in a database?
32. What is the significance of Report in Base?
33. How are Data Models important?
34. Explain DDL and DML commands. Give examples
35. When should you prefer a NUMERIC field type over INT?
36. What is self-management?
37. What is stress? Write its two types.
38. Write the steps involved for self-awareness.
39. Write some symptoms of Bad Stress.
40. Write some tips for self-motivation.
41. What do you mean by emotional intelligence?
42. Write four stress management techniques.
43. Stress management is important for all of us, why? Write some points.
44. What is self-awareness?
45. What are strengths and weaknesses?

46. How one can be self-aware? Write some steps.
47. How are interests and capabilities interlinked?
48. What are field formats? Give example
49. What is sorting?
50. Give examples of many-to-many relationships.