DELHI PUBLIC SCHOOL BULANDSHAHR

HOLIDAY HOMEWORK (SESSION: 2025 – 2026)

XII, ENGLISH

READING COMPREHENSION

1. Read the passage given below and answer the questions that follow: (12 marks)

1. I got up at 4 in the morning, melted snow, and brewed tea. After a light breakfast, I left my tent at around 5.30 a.m. John Cooper was standing outside. He was going to climb without oxygen. But because of this, his feet would get very cold. He, thus, wanted to avoid long exposure at heights and a night at the Summit Camp. He had, therefore, to either get to the peak and back to the South Col the same day or abandon the attempt.

2. He asked if I would like to go with him. Going to the top from the South Col and back in a day would be strenuous and tough and there was the risk of John Cooper turning back if his feet got too cold. I, however, had full confidence in him as well as in my stamina and climbing capability.

3. At 6.20, when John Cooper and I stepped out from the South Col, it was a perfect day. There was a gentle breeze but the cold was intense. I was, however, warm in my well-insulated climbing gear. We climbed unroped. The steep frozen slopes were as hard and brittle as sheets of glass. We had to use the ice – axe and I had to kick really hard to get the front teeth of the crampons to bite into the frozen surface. I took every step very deliberately on the dangerous stretches. In less than two hours, we reached the Summit Camp.

4. He told me that the earlier summit party had taken four hours to reach the Summit Camp and added that if we could keep our present pace, we would be on the summit by 1 p.m. After drinking some tea, we moved on. It was terrifying to stand erect on a knife-edge ridge, with a sheer drop on either side. There was some tricky climbing between the South Summit and what is popularly known as Hillary's Step. John Cooper was already over it, but I was still negotiating its vertical face when he gesticulated towards the top. I was thrilled. The goal was near.

5. With renewed vigour, I was on top of the step in seconds. The sun had made the snow soft and climbing was easier here than it had been earlier. We trudged in the heavy powder snow for some time. Then the gradient started easing off noticeably. A few steps later, I saw that after only a couple of meters there was no upward climb. The slope plunged steeply down. My heart stood still. It dawned on me that success was within reach and at 1.07 p.m. I stood on top of Everest.

A. Choose the correct option of the following questions.   **(1 × 5 = 5 marks)**

(a) What was the first obstacle faced by John Cooper?

i. It was cold and dark   ii. There was no one with him

iii. There was a lack of oxygen   iv. The region was unknown

(b) Why did the narrator choose John Cooper?

i. He was used to the region   ii. His energy levels were high

iii. He could take risks   iv. The narrator had confidence in him

(c) From where they stared climbing?

i. South Camp   ii. South Summit   iii South Col   iv Hillary's Step

(d) How much time had the other summit party taken to reach the Summit camp?

i Two hours   ii Three hours   iii Four hours   iv Less than two hours

(e) What was their destination?

i. South Col ·   ii. Hillary's Step iii. Everest   iv. Summit Camp

B. Based on your understanding of the passage, answer these questions.   (1 × 5 = 5 marks)

(a) Why would John Cooper's feet get very cold?

(b) What were the alternatives of climbing without oxygen?

(c) How did the narrator crossed frozen slopes?

(d) How did the Sun affect their climbing?

(e) How did the narrator feel just before reaching the peak?

C. Pick out the words from the passage which mean the same as the following.   (1×2 = 2)

(a) difficult (para 2)

(b) signaled (para 4)

2. Read the passage given below:

1. YOU say that our government is inefficient. YOU say that our laws are too old. YOU say that the municipality does not pick up the garbage. YOU say that the phones don't work, the railways are a joke, the airline is the worst in the world and mails never reach their destinations. YOU say, say and say.

2. What do you do about it? Take a person on his way to Finland. Give him a name – YOURS. Give him a face -- YOURS. YOU walk out of the airport and you are at your international best. In Finland, you don't throw cigarette butts on the roads. YOU are as proud of their Underground Links as they are. YOU come back to the parking lot to punch your parking ticket, if you have overstayed in a restaurant or a shopping mall, irrespective of your status or identity. In Finland, you don't say anything, DO YOU?

3. YOU wouldn't dare to eat in public during Ramadan in Dubai. YOU would not dare to go out without your head covered in Jeddah. YOU would not dare to speed beyond 55 mph (88 kmph) in Washington and then tell the traffic cop, "Do you know who I am? I am so and so's son YOU wouldn't chuck an empty coconut shell anywhere other than the garbage pail on the beaches in Australia and New Zealand. Why don't YOU spit betel on the streets of Tokyo? We are still talking of the same YOU.

4. YOU, who can respect and follow a foreign system in other countries but cannot in your own. YOU, who will throw papers and cigarettes on the road, the moment you touch Indian ground. If you can be an involved and appreciative citizen in an alien country, why cannot you be the same here in India?

5. Once in an interview, the famous ex-municipal commissioner of Bombay Mr. Tinaikar had a point to make, "Rich people's dogs are walked on the streets to leave their affluent droppings all over the place," he said. "And then the same people turn around to criticize and blame the authorities for inefficiency and dirty pavements. What do they expect the officers to do? Go down with a broom every time their dog feels the pressure in his bowels? In America, every dog owner has to clean up after his pet has done the job. The same is in Japan. Will Indian citizens do that here?" He's right.

A. On the basis of your understanding of the passage, answer the following questions by choosing the most appropriate option. (1 × 5 = 5 marks)

i. How do we blame our government?

(a) It does not work   (b) It is inefficient   (c) It is useless   (d) It does not do anything

ii.Finland is proud of

(a) Its cleanliness   (b) Its parking system   (c) Its links   (d) Its roads

iii. What wouldn't you dare to?

(a) To eat in public during Ramadan in Dubai   (b) To spit betel on road in Tokyo

(c) To throw garbage on road in Australia   (d) All of these

iv. Who was Mr. Tinaikar?

(a) Municipal commissioner of Bombay   (b) Ex-municipal commissioner of Bombay

(c) Commissioner of Bombay   (d) Ex-municipal commissioner of Maharashtra

v. In which country/countries a dog owner cleans/clean his dog's droppings on the roads?

(a) England   (b) America   (c) India   (d) Japan

vi. What are the negative remarks we make about our country?

vii. How does an Indian behave in Finland?

viii. List two deeds an Indian would not dare to do while traveling abroad.

ix. Find a word from the passage which means 'throw' (para 3)

x. Find a word from the passage which means 'prosperous or rich' (para 5)

WRITING SKILLS

3. You are Ganesh/ Gauri living at 39, New Colony, Shimla. You decide to hold a dinner party to congratulate your grandparents on their golden wedding anniversary. Draft a formal invitation in not more than 50 words to all family members to attend a grand dinner at home. (word limit: 50 words)   4

4. You are Ruhi/Rahul, head girl/boy of ABC convent school. Your school is going to organize an Inter-school Singing Competition. Write a notice for your school notice board inviting names of all the interested students. (word limit: 50 words)   4

5. You are Dr. Karan Mehta, invited to inaugurate a science exhibition, but you are unavailable on the mentioned date. Write a formal reply declining the invitation.   4

6. Your friend Neha has invited you to her birthday party. Write an informal reply accepting the invitation. 4

7. You are Priya Sharma, a resident of 221B, Civil Lines, Agra. You are concerned about the increasing problem of garbage accumulation in your locality, which is leading to health hazards. Write a letter to the Editor of a national daily highlighting the issue and suggesting measures.   5

8. You are a resident of Shivaji Nagar Pune. You are concerned about the increasing number of road mishaps in your city. Write a letter to the Editor of a local magazine "Jan Chetna" highlighting the problem and suggesting measures to check the problem. (word limit: 120-150 words)   5

LITERATURE

9. Read the given extracts and answer the questions that follow: 6

Months passed. Shukla was sitting on his haunches at the appointed spot in Calcutta when Gandhi arrived; he waited till Gandhi was free. Then the two of them boarded a train for the city of Patna in Bihar. There Shukla led him to the house of a lawyer named Rajendra Prasad who later became President of the Congress party and of India. Rajendra Prasad was out of town, but the servants knew Shukla as a poor yeoman who pestered their master to help the indigo sharecroppers. So, they let him stay on the grounds with his companion, Gandhi, whom they took to be another peasant. But Gandhi was not permitted to draw water from the well lest some drops from his bucket pollute the entire source; how did they know that he was not an untouchable?   (Indigo)

(a) What is the most likely reason for Gandhi to agree to come along with Shukla?

(b) Select the correct option from those given in brackets to fill in the blank.

Rajkumar Shukla waited Gandhi till he was free, shows his (resoluteness/ indecisiveness).

(c) Complete the following suitably.

The author's views on the character of Shukla, in the extract, can best be described as statements based on ___

(d) Explain any one inference that can be drawn from the following, "To say that Shukla was a resolute man will not be an extravagant claim."

(e) The line, "But Gandhi was not permitted to draw water from the well lest some drops from his bucket pollute the entire source" can be best classified as:

(i) a social practice (ii) an opinion   (iii) a fallacy   (iv) a personal bias

(f) Which of the following headlines gives a clear and accurate picture of the sharecroppers' problem mentioned in the extract?

(i) The farmers wanted compensation from the landlords to release them from the 15% arrangement.

(ii) The landlords wanted compensation from the farmers to release them from the 15% arrangement.

(iii) The farmers refused to grow indigo in their holdings.

(iv) The landlords wanted to replace expensive, natural indigo with the cheap, synthetic version.

10. Read the given extracts and answer the questions that follow: 6
"Sometimes I feel myself I can hardly bear

The thought of so much childish longing in vain, The sadness that lurks near the open window there,
That waits all day in almost open prayer
For the squeal of brakes, the sound of a stopping car," (A Roadside Stand)
(a) Identify the phrase from the extract that suggests the following.
The rural folk are innocent people hoping for someone to give them money.
(b) What will the rural folk feel at the sound of stopping cars?
(i) Hopeful and excited   (ii) Faithful and shocked   (iii) Shocked and devastated   (iv) Excited and shocked
(c) Fill the blank with an appropriate word with reference to the extract.
The squeal of brakes and the stopping of the cars indicate ....
(d) Select the correct option from those given in brackets to fill in the blank.
The word 'squeal' is an example of the figure of speech ..... (oxymoron/onomatopoeia)
(e) Read the Assertion and the Reason below, with reference to the given extract.
Assertion: The rural folk hope that they would receive help from the city people.
Reason: The hope is not fulfilled as the city people are selfish creatures.
Choose the correct option regarding their relationship.
(i) Both the Assertion and the Reason are true, and the Reason is the correct explanation of the assertion.
(ii) Both the Assertion and the Reason are true, but the Reason is not the correct explanation of the Assertion.
(iii) The Assertion is true, but the Reason is false.
(iv) The Assertion is false, but the Reason is true.
(f) What is the 'sadness' referred to in the extract about?

1. Read the given extracts and answer the questions that follow: 4
A. I've been in and out of Grand Central hundreds of times, but I'm always bumping into new doorways and stairs and corridors. Once I got into a tunnel about a mile long and came out in the lobby of the Roosevelt Hotel. Another time I came up in an office building on Forty-sixth Street, three blocks away.
Sometimes, I think Grand Central is growing like a tree, pushing out new corridors and staircases like roots. There's probably a long tunnel that nobody knows about feeling its way under the city right now, on its way to Times Square, and maybe another to Central Park. And maybe - because for so many people through the years Grand Central has been an exit, a way of escape - maybe that's how the tunnel I got into...
(The Third Level)
(a) Complete the following suitably.
The literary device used in 'Grand Central Station growing like a tree' is
(b) What does the narrator mean by 'Grand Central has been an exit'?
(c) Why does, only Charley get lost at the third level in the extract?
(i) Because he is practical.   (ii) Because he is an escapist.
(iii) Because he loves to perform adventures.   (iv) Because he loves travelling.
(d) Explore the genre and writing style of the narrator in the given extract.

2. Answer the following questions in about 40-50 words each.   (2 marks each)

   i.   How does the poem "My Mother at Sixty-six" reflect the poet's inner conflict and universal human fears?
   ii.   Why does the poet use the simile "as a late winter's moon" for her mother? (My Mother at Sixty-six)
   iii. Why does the poet smile at the end even though she is sad?   (My Mother at Sixty-six)
   iv.   "The polished traffic passed with a mind ahead, / Or if ever aside a moment, then out of sorts". What do these lines reveal about the attitude of the city dwellers?   (A Roadside Stand)
   v.   How does Frost use irony to expose the false promises of progress in "A Roadside Stand"?

vi. Imagine you are a social reformer. Based on the poem, suggest two practical steps that can help the people at the roadside stand.

vii. Franz reflects, *"How sorry I was for not learning my lessons, for seeking birds' eggs, or going sliding on the Saar!"* How does this sudden realization about lost time connect to the story's broader themes of colonialism, identity, and education?   (The Last Lesson)

viii. How does the presence of the village elders in the classroom contribute to the emotional gravity of the narrative and reflect a shift in communal consciousness regarding language and national identity? (The Last Lesson)

ix. Discuss how the author uses the character of M. Hamel to explore the emotional and symbolic dimensions of a teacher's role in times of cultural and political crisis.   (The Last Lesson)

x. Analyse the metaphor *"garbage to them is gold"* in the context of Seemapuri's rag-pickers. How does this paradox shape the narrative's critique of consumerist urban India? (Lost Spring)

xi. Jung writes that Saheb's new job at the tea-stall makes him *"no longer his own master."* Evaluate how this transition from informal rag-picking to bonded wage labour complicates conventional narratives of "upward mobility."   (Lost Spring)

xii. What does the story teach us about the importance of valuing things before they are lost? Can you relate it to any modern-day situation?   (Lost Spring)

xiii. The peddler believes that the world itself is a rattrap, offering bait in the form of material comforts. How does this metaphor reflect both his cynicism and serve as a philosophical commentary on human entrapment?   (The Ratttrap)

xiv. Though still quite young Edla Willmansson had a good psychological insight and keen observation. Comment.   (The Ratttrap)

xv. At the end, the peddler leaves behind a rattrap as a gift and signs off as "Captain von Stahle." How does this symbolic gesture encapsulate the themes of identity, repentance, and transformation?   (The Ratttrap)

xvi. How does Louis Fischer use the indigo plant as a symbol to represent both economic exploitation and cultural persistence in the story?

xvii. What was the role of the middlemen in the indigo farming system described in the story?

xviii. What can be inferred from Rajendra Prasad's recorded upshot of the lawyer's consultations, at Motihari? (Indigo)

xix. Discuss how Kalki uses the character of the Tiger King to explore the theme of power and its effects on morality. How does the king's obsession with hunting affect his sense of justice and responsibility?

xx. Analyze the role of irony in the story, especially in relation to the king's fate. How does Kalki use irony to convey a moral lesson?   (The Tiger King)

xxi. How does the Tiger King's attitude towards the tigers reflect his personality and approach to ruling his kingdom?

xxii. How does Jack Finney blur the boundaries between reality and fantasy in *The Third Level*? What impact does this have on the reader?

xxiii. How is the setting of Grand Central Station symbolic in *The Third Level*?

xxiv. What role does nostalgia play in *The Third Level*? Is it a strength or a flaw in Charley's character?

3. **Answer the following question in about 150 words each.**   **5 marks each**

I. "What I did was a very ordinary thing," said Gandhi. What made his actions extraordinary in the Champaran episode?   (Indigo)

ii. The cry of not having money to do anything except carry on the business of making bangles, not even enough to eat, rings in every home.'

(The Lost Spring)

'...far from the city we make our roadside stand and ask for some city money to feel in hand'.

(A Roadside Stand)

Create a conversation between a bangle maker and the owner of a roadside stand with reference to the above extracts.

You may begin the conversation like this:

Owner of a roadside stand: Your bangles are pretty. Tell me about your experience in this business.

      iii. How does Charley make his description of the third level very realistic? (The Third Level)

iv.   How did tiger King succeed in killing 'hundred tigers'? (TheTiger King)

v.   Identify an instance of hope or resilience in 'Lost Spring' and analyse how it reflects one of the story's themes.

DELHI PUBLIC SCHOOL BULANDSHAHR

Work Sheet 1(MSE) (Session:2025-2026)
Subject: Accountancy (055)
Class: XII

1. What is the other name of Partnership Deed? [1

   a) Articles of Partnership

   c) Legal Promissory Note

   b) Certificate of Registration

   d) Articles of Association

2. When there is no partnership deed, the partners are entitled to which of the following? [1

   a) Salary

   c) Profit share in capital ratio

   b) Interest on loan and advances

   d) Commission

3. Assertion (A): The fixed capital method is better as compared to the fluctuating capital method. [1
   Reason (R): The capital of the partners is fixed, and all the transactions is recorded in the current account.

   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.

4. A partner withdraws ₹ 8,000 each on 1st April and 1st Oct. Interest on his drawings @ 6% p.a. on [1
   31st March will be:

   a) ₹ 960

   c) ₹ 240

   b) ₹ 480

   d) ₹ 720

5. Which of the following will not covered under finance cost? [1
   i. Discount on issue of debentures written off

   ii. Interest paid on bank overdraft

   iii. Bank charges

   iv. Premium payable on redemption of debentures written off

   a) Only ii

   b) Only iv

c) Financing Activities   d) Operating Activities

12. How is dividend paid treated by a financial enterprise for the purpose of preparing cash flow statement?   [1

13. What is meant by outflow of cash while preparing cash flow statement?   [1

14. A company's Current assets are ₹ 3,00,000 and its current liabilities are ₹ 2,00,000. Subsequently, it paid ₹ 50,000 to its trade payables. Current ratio will be   [1

     a) 2 : 1   b) 1.67 : 1

     c) 1.25 : 1   d) 1.5 : 1

15. A firm made credit Revenue from Operations is ₹ 10,00,000 during the year. If the trade receivables turnover ratio is 10 times, closing trade receivables are two times more in comparison to opening trade receivables. Closing trade receivable will be: [1

     a) 50,000   b) 1,50,000

     c) 1,00,000   d) 2,00,000

16. Opening inventory 50,000; Purchases 3,00,000; return outward 10,000; Wages 10,000; Carriage outward 12,000; Revenue from operation 5,40,000; Closing inventory 60,000. Gross profit will be: [1

     a) 2,50,000   b) 2,60,000

     c) 2,38,000   d) 2,30,000

17. On the basis of following information received from a firm, its Total Assets-Debt Ratio will be: Shareholder's Funds ₹2,00,000; Dr. Balance of Profit & Loss ₹ 50,000; Current Liabilities ₹ 1,00,000; Current Assets ₹ 2,00,000; Total Assets ₹ 6,00,000.   [1

     a) 1.5 : 1   b) 1.71 : 1

     c) 2 : 1   d) 3 : 1

18. How the solvency of a business is assessed by financial statement analysis?   [1

19. Give any two advantages of analysis of financial statements.   [1

20. Assertion (A): Financial analysis is a systematic process of analysing the financial statements for presenting them in a understandable form for the purpose of decision making.
Reason (R): Various tools for analysing the financial statements are Comparative Statements, Common-size Statements, Accounting Ratios, Cash Flow Statement etc.   [1

c) Only i   d) Only iii

6. What are the financial statements?   [1

7. Assertion (A): A trading company sells its fixed assets through an agent. The agent is to be paid ₹   [1
   50,000 as fee which can be shown as Trade payables in the Balance sheet.
   Reason (R): Trade payables are defined as the amount payable against purchase of goods or services
   taken in the normal course of business and includes both sundry creditors and bills payable.

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

   c) A is true but R is false.   d) A is false but R is true.

8. Which analysis is considered more dynamic?   [1

   a) Horizontal Analysis   b) Vertical Analysis

   c) Internal Analysis   d) External Analysis

9. Assertion (A): Common-size Balance Sheet is the Horizontal analysis of Balance Sheet.   [1
   Reason (R): In Common-size Balance Sheet total of assets is taken as 100 and all other items of
   assets, liabilities and shareholder's funds are expressed as percentage of Total Assets.

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

   c) A is true but R is false.   d) A is false but R is true.

10. Koval Ltd. is a financing company. Under which activity will the amount of interest paid on a loan   [1
    settled in the current year be shown?
    i. Investing Activities
    ii. Financing Activities
    iii. Both Investing and Financing Activities
    iv. Operating Activities

    a) ii and iii   b) iii and iv

    c) i and ii   d) only iv

11. Payment of Income Tax is shown as: [1

    a) General Activities   b) Investing Activities

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. From the following information of Magnum Ltd. for the year ended 31st March, 2023, prepare Note to Accounts on Finance Costs: [3

   i. Interest paid on Term Loan ₹ 2,50,000

   ii. Interest paid on Bank Overdraft ₹ 35,000

   iii. Discount on Issue of Debentures Written off ₹ 10,000

   iv. Interest Received on Fixed Deposits ₹ 25,000

   v. Bank Charges ₹ 9,500 and

   vi. Interest paid on Deposits ₹ 75,000

22. From the following information extracted from the Statement of Profit and Loss for the years ended 31st March, 2022 and 2023, prepare a Comparative Statement of Profit & Loss: [3

Particulars	2022-23	2021-22
Revenue from operations	₹ 6,00,000	₹ 5,00,000
Other incomes (% of revenue from operations)	20%	20%
Employee benefit expenses (% of Total Revenue)	40%	30%
Tax rate	50%	50%

23. Identify the following transactions belonging to: [3

   i. Operating Activities

   ii. Investing Activities

   iii. Financing Activities, and

   iv. Cash and Cash Equivalents:

      a. Cash Sales;

      b. Cash Purchase;

      c. Rent Paid;

      d. Cash-in-Hand;

      e. Income Tax Paid;

      f. Office Expenses;

      g. Balance at Bank;

      h. Sale of Machines by a dealer of Machines;

      i. Issue of Debentures;

iii. Debit balance of Statement of Profit & Loss

iv. Term Loan from Bank

v. Loan repayable on demand

vi. Shares in S.B.I.

vii. Investments

viii. Interest Accrued on Investments

ix. Guarantees given by the Company

28. From the following information, prepare Comparative Balance Sheet of Y Ltd.: [4

	31st March, 2023 (Figures being in Lakh off ₹)	31st March, 2022 (Figures being in Lakh off ₹)
Share Capital	25	20
Investments	9	5
Long-term Borrowings	12	9
Inventories	18	20
Cash and Cash Equivalents	2	5
Current Liabilities	12	15
Reserves	40	36
Tangible Assets	50	40
Intangible Assets	10	10

29. Calculate Cash Flow from Operating Activities from the following Information: [4

Particulars	₹
Net Profit after Provision for Tax and Proposed Dividend	1,10,000
Provision for Tax	50,000
Dividend declared (approved) by shareholders during the year	50,000
Depreciation	20,000
Loss on Sale of Plant	10,000
Goodwill Amortised	40,000
Gain on Sale of Land	40,000
Income Tax Paid	50,000
Income Tax Refund	40,000

j. Dividend Paid;

k. Cash Paid against Trade Payables;

l. Purchase of Machines;

m. Income Tax Refund Received;

n. Issue of Share Capital;

o. Sale of Patents;

p. Purchase of Marketable Securities;

q. Purchase of Goodwill;

r. Short-term Deposits in Banks;

s. Purchase of Securities (Non-marketable);

t. Cash Received from Debtors.

24. Calculate G.P. Ratio from the following:- Credit Revenue from Operations were $\frac{1}{4}$ th of Total [3 Revenue from Operations. Credit Revenue from Operations were ₹ 1,20,000. Credit Purchases were $\frac{1}{5}$ th of Cash Purchases. Credit Purchases were ₹ 40,000. Opening Inventory ₹ 70,000. It was ₹ 20,000 more than Closing Inventory; Carriage ₹ 15,000, Wages ₹ 45,000.

25. One of the objectives of 'financial statement analysis' is to identify the reasons for change in the [3 financial position of the enterprise. State two more objectives of this analysis.

26. X and Y are partners in a firm. X gets a commission of 10% on the net profits before charging any [4 commission and Y gets a commission of 10% on the net profits after charging all commission. Compute the missing figures from the following Profit and Loss Appropriation Account for the year ended 31st March, 2015.

Profit and Loss Appropriation Account
for the year ended on 31st March, 2015

Dr.				Cr.
Particulars	(Rs)	Particulars		(Rs)
To X's Comission	1,65,000	By profit and loss A/c(By Net profit)		---
To Y's Comission A/c	--			
To Profit Transferred to				
X's Capital A/c	--			
Y's Capital A/c	--	--		

27. How would you disclose the following items in the Balance Sheet of a Company: [4

i. Discount/Loss on Issue of Debentures

ii. Premium on Redemption of Debentures

Accumulated Depreciation	16,60,000	Sundry Debtors	8,00,000
Investments	4,00,000	Cash	1,50,000
Current Liabilities	8,00,000	Loans and Advances	50,000
12% Debentures	6,00,000	Provision for Taxation	2,00,000

33. From the following Balance Sheets of FF Ltd. as at 31-3-2023 and 31-3-2022 prepare a Cash-Flow Statement: [6

Particulars	Note No.	31.3.2023 ₹	31.3.2022 ₹
I. EQUITY & LIABILITIES:			
(1) Shareholder's Funds:			
(a) Share Capital	1	3,25,000	2,30,000
(b) Reserves and Surplus	2	1,85,000	1,20,000
(2) Non-Current Liabilities:			
Long term borrowings	3	90,000	1,00,000
TOTAL		6,00,000	4,50,000
II. ASSETS:			
(1) Non-Current Assets:			
(a) Property, Plant and Equipment and Intangible Assets			
(i) Property, Plant and Equipment (Machinery)		3,50,000	2,50,000
(2) Current Assets:			
(a) Inventory		1,25,000	1,05,000
(b) Trade Receivables		95,000	70,000
(c) Cash & Cash Equivalents		30,000	25,000
TOTAL		6,00,000	4,50,000

Notes to Accounts:

		31.3.2023 ₹	31.3.2022 ₹
(1)	Share Capital:		
	Equity Share Capital	2,75,000	2,00,000
	8% Preference Share Capital	50,000	30,000
		3,25,000	2,30,000
(2)	Reserve & Surplus:		

30. From the following calculate: [4

a. Net Profit Ratio

b. Operating Profit Ratio

S.No.	Items	Amount (₹)
(i)	Revenue from Operations (Sales)	2,00,000
(ii)	Gross Profit	75,000
(iii)	Office Expenses	15,000
(iv)	Selling Expenses	26,000
(v)	Interest on Debentures	5,000
(vi)	Accidental losses	12,000
(vii)	Income from Rent	2,500
(viii)	Commission received	2,000

31. Yogesh Ravi and Raju were partners in a firm sharing profits and losses in the ratio of 3 : 3 : 4. Their [6 partnership deed provided for the following.

i. Interest on capital @ 5% per annum.

ii. Interest on drawing @ 12% per annum.

iii. Interest on partner's loan @ 6% per annum.

iv. Yogesh was allowed an annual salary of ₹ 4,000, Ravi was allowed a commission of 10% of net profit as shown by profit and loss account and Raju was guaranteed a profit of ₹ 1,50,000 after making all the adjustments as provided in the partnership agreement.

Their fixed capitals were Yogesh : ₹ 5,00,000: Ravi : ₹ 8,00,000 and Raju : ₹ 4,00,000. On 1st April, 2022 Ravi extended a loan of ₹ 1,00,000 to the firm. The net profit of the firm for the year ended 31st March, 2023 before interest on Ravi's loan was ₹ 3,06,000. Prepare Profit and loss appropriation account if Yogesh, Ravi and Raju for the year ended 31st March, 2023 and their current accounts assuming that Ravi withdrew ₹ 5,000 at the end of each Month, Yogesh withdrew ₹ 10,000 at the end of each quarter and Raju withdrew ₹ 40,000 at the end of each half year.

32. Prepare Balance Sheet of HP Ltd. as at 31st March, 2023 from the following information: [6

	₹		₹
Equity Share Capital	20,00,000	Workmen Compensation Reserve	1,00,000
12% Preference Share Capital	10,00,000	Surplus, i.e., Balance in Statement of Profit & Loss (Cr.)	3,00,000
Property, Plant, and Equipment	46,60,000	Stock	6,00,000

	Total	27,40,000	19,80,000

Notes to Accounts:

Particulars	31 March, 2019 (₹)	31 March, 2018 (₹)
1. Reserve and Surplus		
Surplus (Balance in statement of Profit and Loss)	4,00,000	(1,00,000)
2. Long term Borrowings		
12% debentures	9,00,000	10,00,000
3. Short term Borrowings		
Bank overdraft	3,00,000	1,00,000
4. Short term provisions		
Provision for tax	1,40,000	1,80,000
5. Tangible Assets		
Machinery	24,06,000	16,42,000
Less : Accumulated Depreciation	(4,00,000)	(2,02,000)
	20,06,000	14,40,000
6. Intangible Assets		
Goodwill	40,000	60,000
7. Inventories		
Stock in trade	2,14,000	90,000

Additional Information:

i. 12% Debentures were redeemed on 31st March, 2015.

ii. Tax ₹ 1,40,000 was paid during the year.

Prepare Cash Flow Statement.

35. Following information is given by a company from its books of accounts as on March 31, 2017: [6

Particulars	₹
Inventory	1,00,000
Total Current Assets	1,60,000
Shareholders' funds	4,00,000
13% Debentures	3,00,000
Current liabilities	1,00,000
Net Profit Before Tax	3,51,000

10

			25,000	35,000
	General Reserve			
	Profit & Loss Balance		1,60,000	85,000
			1,85,000	1,20,000
(3)	Long-term Borrowings:			
	10% Debentures		90,000	1,00,000

Additional Information:

i. During the year machinery of the book value of ₹ 50,000 was sold for ₹ 15,000.

ii. Interim dividend paid on equity share capital ₹ 20,000.

34. Following is the Balance Sheet of K.K. Ltd. as at 31st March, 2015: [6

BALANCE SHEET as at 31st March, 2015

Particulars	Note No.	31st March, 2015 ₹	31st March, 2014 ₹
I. Equity and Liabilities			
1. Shareholders' Funds			
(a) Share Capital		10,00,000	8,00,000
(b) Reserve and Surplus	1	4,00,000	(1,00,000)
2. Non-Current Liabilities:			
Long-term Borrowings	2	9,00,000	10,00,000
3. Current Liabilities:			
(a) Short term Borrowings	3	3,00,000	1,00,000
(b) Short term Provisions	4	1,40,000	1,80,000
Total		27,40,000	19,80,000
II. Assets:			
1. Non-Current Assets:			
(a) Fixed Assets:			
(i) Tangible Assets	5	20,06,000	14,40,000
(ii) Intangible Assets	6	40,000	60,000
(b) Non-Current Investments		2,00,000	1,50,000
2. Current Assets			
(a) Current Investments		1,00,000	1,20,000
(b) Inventories	7	2,14,000	90,000
(b) Cash and Cash Equivalents		1,80,000	1,20,000

| Cost of revenue from operations | 5,00,000 |

Calculate:

   i. Current Ratio

   ii. Liquid Ratio

   iii. Debt Equity Ratio

   iv. Interest Coverage Ratio

   v. Inventory Turnover Ratio

7. What are the importance of financial statement

    a) all of these

    b) report on stewarding function

    c) Disclosing accounting policies

    d) information about activities of business affecting the society

8. Cash Flow from Operating activities + Cash flow from investing activities + Cash flow from financing activities =?

    a) Net Increase/Decrease in cash and cash equivalents

    b) Net Increase/Decrease in Share Capital

    c) Net Increase/Decrease in Non-current Assets

    d) Net Increase/Decrease in Long term borrowings

9. _____ analysis involves the comparison of different firms financial ratio at the same point of time.

    a) Cross-sectional

    b) Quantitative

    c) Time-series

    d) Marginal

10. On the basis of following information received from a firm, its Debt-Equity Ratio will be: Equity Share Capital ₹ 5,80,000; Reserve Fund ₹ 4,30,000; Preliminary Expenses ₹ 40,000; Long term Debts ₹ 1,28,900; Debentures ₹ 2,30,000.

    a) 0.53 : 1

    b) 0.63 : 1

    c) 0.37 : 1

    d) 0.42 : 1

11. INVENTORY TURNOVER RATIO is also called as

    a) Creditor's turnover ratio

    b) Working capital turnover ratio

    c) Debtor turnover ratio

    d) Stock turnover ratio

12. Assertion (A): If the partnership deed is silent, interest on the partner's loan will be provided @ 6% p.a.
Reason (R): As per Partnership Act, 1932, Partners must have a partnership deed.

    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.

13. Assertion (A): Partners' current accounts maintained under Fixed Capital Method may show a debit or a credit balance.
Reason (R): In the Fixed Capital Method, all items like share of profit or loss, interest on capital, drawings, interest on drawings etc. are recorded in the partners' capital accounts.

    a) Assertion (A) and Reason (R) are correct, but Reason (R) is not the correct explanation of Assertion (A).

    b) Both Assertion (A) and Reason (R) are correct and Reason (R) is the correct explanation of Assertion (A).

    c) Assertion (A) is correct, but Reason (R) is not correct.

    d) Both Assertion (A) and Reason (R) are not correct.

14. Assertion (A): A Ltd issued 5,00,000, 9% Debentures of ₹ 100 each on 1st April 2016, redeemable in 5 equal yearly instalments starting from 31st March 2017. ₹ 4,00,00,000 Debentures will be shown under Non-current

DELHI PUBLIC SCHOOL BULANDSHAHR

WORKSHEET-2 (MSE)

(Session: 2025-26)

Subject - Accountancy (055)

Class: XII

1. It is compulsory for a partnership firm to have:

   a) Written Agreement i.e. Partnership Deed
   b) Lawful business
   c) Profit sharing ratio equal
   d) 50 Members in the partnership

2. A charitable dispensary is run by 8 members. A new member wants to join them. The new member is of the opinion that partnership deed must be written while other members refused to do that. They said this is not a partnership. Give reason(s) in favour of other members.

   a) There is no sharing of profits
   b) There is no business
   c) All of these
   d) There is no motive of profit making

3. Net profit of a firm is ₹ 4,950. Manager is entitled to a commission of 10% on profits before charging his commission. Manager's commission will be:

   a) ₹ 485
   b) ₹ 550
   c) ₹ 495
   d) ₹ 450

4. Ramesh, piya and Mohit are partners sharing profits in the ratio of 2 : 2 : 1. Mohit is guaranteed that his share of profit will not be less than ₹ 50,000. Any deficiency will be borne by Ramesh and Piya equally. The profit of the firm for the year ending was ₹ 2,00,000. What will be the share of Piya?

   a) 75,000
   b) 80,000
   c) 70,000
   d) 85,000

5. Pari, Manisha and Rajni are partners in a firm sharing profits and losses in the ratio of 2 : 2 : 1. The balances of their fixed capital accounts on 1st April, 2022, were: Pari ₹ 1,00,000, Manisha ₹ 1,00,000 and Rajni ₹ 80,000. After the accounts for the year ended 31st March, 2023, were prepared, it was discovered that interest on capital @ 10% per annum had been credited to the partners' current accounts even though it was not provided in the partnership deed.

   The error in Pari's capital account / current account will be rectified by:

   a) Crediting her current account with ₹ 1,200
   b) Crediting her capital account with ₹ 1,200
   c) Debiting her current account with ₹ 1,200
   d) Debiting her capital account with ₹ 1,200

6. Statement of profit and loss shows:

   a) financial performance
   b) financial position
   c) assets and liabilities
   d) Income statement

iii. Interest Coverage Ratio reveals the number of times interest on long term debts is covered by the profits available for interest.

   a) All are correct.   b) (i) and (iii) are correct.

   c) (i) and (ii) are correct.   d) (ii) and (iii) are correct.

21. E, F and G were partners in a firm sharing profits in the ratio of 3 : 3 : 4. Their respective fixed capitals were E ₹ 3,00,000; F ₹ 4,00,000 and G ₹ 5,00,000. The partnership deed provided for allowing interest on capital @ 12% p.a. even if it results into a loss to the firm. The net profit of the firm for the year ended 31st March, 2018 was ₹ 2,10,000.

   Pass necessary journal entries for allowing interest on capital and division of profit/loss in the books of the firm.

22. Ram, Ravi and Raja are partners in a firm. Their profit-sharing ratio is 5 : 3 : 2. Raja is guaranteed a minimum profit of ₹ 10,000 every year. Any deficiency arising is to be met by Ravi. Profits for the two years ended 31st March, 2023 and 2024 were ₹ 40,000 and ₹ 60,000 respectively.

   Prepare Profit & Loss Appropriation Account for the two years.

23. Briefly explain the nature of expenses that are shown under Finance Costs.

24. Calculate (i) Debt-Equity Ratio; (ii) Total Assets to Debt Ratio; and (iii) Proprietary Ratio from the following particulars:

	₹
Equity Share Capital	3,00,000
Preference Share Capital	1,00,000
General Reserve	1,80,000
Profit & Loss Balance	1,20,000
Debentures	3,00,000
Trade Payables	1,60,000
Outstanding Expenses	40,000

What conclusions do you draw from the above ratios?

25. Revenue from Operations ₹ 4,00,000; Gross Profit ₹ 1,00,000; Closing Inventory ₹ 1,20,000; Excess of Closing Inventory over Opening Inventory ₹ 40,000. Calculate Inventory Turnover Ratio.

26. From the following Balance Sheet of Hira Ltd. as at 31st March, 2023, prepare Comparative Balance Sheet:

Balance Sheet of Hira Ltd. as at 31st March, 2023

Particulars	Note No.	31.3.2023 (₹)	31.3.2022 (₹)
I - Equity and Liabilities:			
1. Shareholders' Funds			
(a) Share Capital		15,00,000	12,00,000
2. Non-Current Liabilities			
(a) Long-term Borrowings		10,00,000	5,00,000

liabilities and ₹ 1,00,00,000 Debentures will be shown under Current liabilities.

Reason (R): ₹ 1,00,00,000 Debentures are to be redeemed after the operating cycle of the company and will be classified as Current maturities of long-term borrowings.

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.

15. Assertion (A): Comparative Balance Sheet provides information regarding progress of the business firm.

Reason (R): The Comparative Balance Sheet shows increase and decrease in absolute terms as well as in percentage in various assets, liabilities and capital.

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.

16. Assertion (A): While calculating the Current Ratio, Loose Tools and Stores & Spares are not included in the current asset.

Reason (R): Loose Tools and Stores & Spares are not held for sale or conversion into cash.

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.

17. Assertion (A): Higher the Gross Profit ratio, good for the business, lower ratio not good for the business.

Reason (R): It reflects the efficiency with which a firm produces its products. A high gross profit ratio indicates that the organization is able to produce at a relatively lower cost.

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.

18. Fill in the blanks:

(a) Partnership is born by _____.

19. Which of the following statements are correct:

i. The liability of a partner for acts of the firm is unlimited.

ii. Private assets of a partner can also be used for paying the debts of the firm.

iii. Each partner is liable jointly with all other partners and also severally to the third parties for all the acts of the firm done, while he is a partner.

iv. The liability of a partner is limited to the extent of his capital contribution.

a) (i) and (ii)

b) Only (iii)

c) (i), (ii), (iii) and (iv)

d) (i), (ii) and (iii)

20. Which one of the following statement is/are correct?

i. Quick Ratio is considered better than Current Ratio as a measure of liquidity position of business.

ii. Debt-equity ratio measures the short term solvency of the business.

3. Current Liabilities			
(a) Trade Payables		1,00,000	3,00,000
Total		26,00,000	20,00,000
II - Assets:			
1. Non-Current Assets			
(a) Fixed Assets/Property, Plant and Equipment and Intangible Assets		20,00,000	15,00,000
2. Current Assets			
(a) Inventories		1,50,000	1,00,000
(b) Trade Receivables		4,50,000	4,00,000
Total		26,00,000	20,00,000

27. Convert the following particulars into Common Size Statement of Profit & Loss and interpret the changes in 2023:

Particulars	Note No.	31.3.2023	31.3.2022
Revenue from Operations		18,00,000	15,00,000
Other Income		72,000	45,000
Cost of Materials Consumed		8,64,000	6,60,000
Employee Benefit Expenses		1,80,000	1,80,000
Other Expenses		54,000	1,05,000

28. Classify the following into Cash Flows from-

Operating Activities; Investing Activities; Financing Activities.

   i. Cash sale of goods in cash

   ii. Cash payment to acquire fixed assets

   iii. Cash payments from issuing shares at a premium

   iv. Payment of dividend

   v. Interest received on Investment

   vi. Interest Paid on debentures

   vii. payment of income tax

   viii. Cash repayment of long term loans

   ix. Cash payment of salaries and wages to employees

29. Current ratio is 3 : 1 and quick ratio is 2:1.Inventories are Rs. 40,000.Calculate current liabilities.

30. Calculate Return on Investment Ratio and Stock Turnover Ratio from the figures given below:

Particulars	(₹)
Opening Inventory	30,000
Closing Inventory	40,000
Carriage Inwards	10,000

Purchases	1,00,000
Current Assets	50,000
Current Liabilities	20,000
Non Current Assets	80,000
Indirect Expenses	15,000
Revenue from Operations	2,00,000

31. Manish and Sumit are partners with capitals of ₹ 6,00,000 and ₹ 2,00,000 respectively on 1st April, 2022. Net profit (before giving effect to the Partnership Deed) for the year ended 31st March, 2023 was ₹ 2,40,000. The Partnership Deed provides salary to Sumit of ₹ 60,000 p.a.

Interest allowed on capitals of Manish and Sumit were ₹ 36,000 and ₹ 12,000 respectively.

Drawings of the partners of Manish and Sumit were ₹ 60,000 and ₹ 40,000 respectively and interest charged on drawings were ₹ 2,000 and ₹ 1,000 respectively.

Show how profit will be distributed between Manish and Sumit and also prepare the Capital Accounts of the partners along with their Drawings Accounts:

    i. if the capitals are fixed, and

    ii. if the capitals are fluctuating.

32. Rakhi and Asha are partners with capitals of ₹ 3,00,000 and ₹ 2,00,000 respectively sharing profits as Rakhi 70% and Asha 30%. During the year ended 31st March 2023 they earned a profit of ₹ 2,26,440 before allowing interest on partner's loan. The terms of partnership are as follows:

    i. Interest on Capital is to be allowed @ 7% p.a.

    ii. Rakhi to get a salary of ₹ 2,500 per month.

    iii. Interest on Asha's Loan account of ₹ 80,000 for the whole year.

    iv. Interest on drawings of partners at 8% per annum. Drawings being Rakhi ₹ 36,000 and Asha ₹ 48,000.

    v. $\frac{1}{10}th$th of the distributable profit should be transferred to General Reserve.

Prepare the Profit and Loss Appropriation Account.

33. You are required to prepare Cash-Flow Statement from the following informations:-

	₹
(i) Interim Dividend paid during the year	7,000
(ii) Plant Purchased	20,000
(iii) Intangible Assets written off during the year	10,000
(iv) Debentures redeemed on 1st Feb. 2023	12,000
(v) Interest on debentures has been paid up-to date.	

BALANCE SHEET

as at 31st March 2023 and 2022

Particulars	Note No.	31.3.2023	31.3.2022
I. EQUITY AND LIABILITIES:		₹	₹

Non Current Liabilities			
Long Term Borrowings	3	200000	250000
Current Liabilties			
Short Term Provisions	4	74000	49000
		1224000	1124000
Assets			
Non Current asset			
Fixed Asset			
Machinery		500000	300000
Non current investments		200000	140000
Current asset			
Invesntories		150000	200000
Trade receivables		204000	174000
Cash		170000	310000
		1224000	1124000

Share capital		
Equity Share capital	600000	300000
12% preferance share capital	100000	200000
	700000	500000
Reserve and surplus		
General Reserve	135000	375000
Surplus	115000	-50000
Long Term Borrowings		
9% Debenturs	200000	250000
Short Term Provisions		
Proposed Dividend	24000	24000
Provision for Tax	50000	25000
	74000	49000

Additional Information

i. Machinery Costing 100000 on which Depreciation charged was 70000 was sold at a profit of 20% on book value. dep charged during the year amounted to 70000.

ii. Preference shares redeemed at par on 31st march 2017

iii. Debentures were redeeemed on Jan 1 , 2017 and equity shares were issued on april 1,2016

(1) Shareholder's Funds:			
(a) Share Capital		1,48,000	1,40,000
(b) Reserve & Surplus		21,120	20,080
(2) Non-Current Liabilities:			
Long-term Borrowings	1	12,000	24,000
(3) Current Liabilities:			
(b) Trade Payables		23,680	20,720
(c) Short-term Provision	2	1,600	1,400
TOTAL		2,06,400	2,06,200
II. ASSETS:			
(1) Non-Current Assets:			
(a) Property, Plant and Equipment and Intangible Assets:			
(i) Property, Plant and Equipment (Plant & Machinery)		60,000	40,000
(ii) Intangible Assets		10,000	20,000
(2) Current Assets:			
(a) Inventory		85,400	98,400
(a) Trade Receivables		35,400	29,800
(c) Cash & Cash Equivalents		15,600	18,000
TOTAL		2,06,400	2,06,200

Notes:-

	31.3.2023	31.3.2022
	₹	₹
(1) Long-term Borrowings:		
12% Debentures	12,000	24,000
(2) Short Term Provision:		
Provision for Doubtful Debts	1,600	1,400

34.   From the following Balance Sheet of Vehalna Steel Ltd. as at 31st March 2017 and 31st March 2016. Prepare Cash Flow Statement:

Particulars	Note No.	31st March 2017	31st March 2016
I EQUITY AND LIABILITY			
Share holders fund			
Share Capital	1	700000	500000
Reserves and surplus	2	250000	325000

iv. Income tax 45000 was provided

v. Non current investments costing 60000 were sold at a profit of 20%

vi. The company declares and paid interim dividend on equity shares 40 per share out of generl reserve. It did not propose final dividend on equity shares.

35. Cash Revenue from Operations ₹1,00,000; Credit Revenue from Operations ₹3,00,000; Gross Profit 30% on Revenue from Operations; Inventory Turnover Ratio = 2 Times.

Calculate Opening Inventory and Closing Inventory in each of the following cases:

Case 1: If Opening Inventory is $\frac{1}{3}$ rd of the inventory at the end.

Case 2: If Closing Inventory is 25% less than the inventory in the beginning.

Case 3: If Opening Inventory is 75% of Closing Inventory and Closing Inventory is 30% of Revenue from Operations.

Reason (R): Planning is an activity which is done by the top management. Usually the rest of the members just implements these plans. As a consequence, middle management and other decision makers are neither allowed to deviate from plans nor are they permitted to act on their own.

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.

9. Identify the principle of management followed in the following pictorial representation.

a) Discipline

b) Remuneration

c) Harmony, not discord

d) Cooperation, Not individualism

10. Identify the responsibility of consumers being promoted in the picture.

a) Read labels carefully

b) Assert yourself to ensure that you get a fair

c) Be honest in your dealings

d) Buy only standardised goods

11. Match the following:

(a) Management Principles are	(i) Methods and procedures
(b) Management Techniques are	(ii) General guidelines for action
(c) Scientific Management	(iii) Developed only after deep and thorough research work.
(d) Formed by practice and experiments are	(iv) Application of science for each and every element of management.

12. Under The Consumer Protection Act, 2019, _____ can be approached to file a complaint by the legal heir of a deceased consumer if compensation claimed is ₹ 3 crores.

a) All of these

b) National Commission

c) District Commission

d) State Commission

13. Following are the steps of Planning Process. Arrange them in correct sequence:

DELHI PUBLIC SCHOOL BULANDSHAHR

HOLIDAY HOMEWORK (Session: 2025-26)

Subject- Business Studies (054)

Class - XII

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1. On what basis the principles of management were derived?

   a) Both in a business non-business field   b) In the field of business

   c) In the field of work only   d) In the non-business field

2. At what managerial level planning is needed?

   a) Lower level   b) Top level

   c) All the levels   d) Middle level

3. _____ refers to designing the label to be put on the package.

   a) Labelling   b) Branding

   c) Pricing   d) Packaging

4. This concept has to face certain objections from society:

   a) Advertisement   b) Sales promotion

   c) Public relations   d) Personal selling

5. Which of the following is not the example of unfair trade practice?

   a) Wrong information about goods/services   b) Indulging in hoarding

   c) Compelling consumers to buy a gas stove   d) Not observing prescribed standards
   while getting a gas connection

6. Assertion (A): One of the major contributions of FW Taylor is the 'Piece Rate System'.

   Reason (R): He has also published various books and research papers on Industrial Organisation and Management.

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

   c) A is true but R is false.   d) A is false but R is true.

7. Assertion (A): No Changes can be made in plans once they are implemented.

   Reason (R): Implementation of plans mean putting the plans into action.

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

   c) A is true but R is false.   d) A is false but R is true.

8. Assertion (A): Planning reduces creativity.

This served as a basis for coordinating the activities of all departments, led to clarity of thought and action and work got off to a smooth start. The point of importance of planning discussed above is:

a. Planning reduces overlapping and wasteful activities.

b. Planning establishes standards for controlling.

c. Planning reduces the risks of uncertainty.

d. Planning promotes innovative ideas.

    a) option (b)   b) option (d)

    c) option (a)   d) option (c)

19. Since childhood Neha and Raman had been watching their grandmother procuring wheat from the market, washing it well drying it and getting it converted into atta. They conducted a survey to collect data to identify whether there is demand for readymade atta and realised that with the growing number of working women, it is the need of the hour to manufacture high quality atta. They named their product **Samrat** and set up **Samrat Atta Factory** at Lucknow Village. To penetrate in the market, they decided to keep the price low. For maintaining smooth flow of their product into the market and avoiding delays in delivery, it was decided to store wheat at SKM Services which had scientific processes and logistics facilitating quick delivery. They also set up an online complaint portal to take care of consumer grievances. Identify the marketing function undertaken by Neha and Raman for successful marketing of Samrat atta.

    a) Storage or warehousing   b) Gathering and analyzing market information

    c) Branding   d) All of these

20. Fill in the blanks:

    (a)   Planning is prepared for a _____ period of time.

    (b)   The nature of corrective action required depends upon the extent of _____ from the standard.

21. Having transformed 2500 Kirana stores across eight cities in to virtual super markets, the start up Quick Bizz further decided in advance, to collaborate with 15,000-20,000 store owners in top 30 cities of the country by the end of this year. The company has set its eye on digitizing over 1,00,000 kirana stores over next 18-24 months.

    a. Identify and explain the step in the process of one of the functions of management discussed above.

    b. Also explain the last step to be performed by Quick Bizz as part of the process.

22. ABC Crackers Ltd., a fire-cracker manufacturing company, launched some new products on the eve of Diwali in the market which attracted many buyers. To meet the increasing demand, the company employed people from nearby villages where there was a lot of unemployment. Because of the good behaviour of the management with the employees, more and more people wanted to join the company. As the products were in great demand in the market, a competitor imitated the products. The products of the competitor were not accepted by the consumers as it was a status symbol to buy the products of ABC Crackers Ltd. because of their quality.

    a. Identify and explain the product-related decision because of which consumers prefer red the products of ABC Crackers Ltd.

    b. Also, mention 4 P's of marketing mix.

23. Aryan went to purchase a pack of chocolate for his son from a shop in the nearby market. Despite his preference to buy a pack of a particular brand the shopkeeper forced him to buy the pack of chocolate of another brand, by

i. Developing premises
ii. Identifying the course of action
iii. Setting objective
iv. Evaluating alternative courses

a) (i), (iv), (iii), (ii) b) (iii), (ii), (i), (iv)

c) (i), (iii), (ii), (iv) d) (iii), (i), (ii), (iv)

14. Statement I: The focus of the marketing concept is on customer needs and the customer satisfaction becomes the means to achieving the firms' objective of maximising profit.
Statement II: The purpose of marketing is to generate customer value at a profit.

a) Statement II is correct and Statement I is not correct. b) Both the Statements I and II are not correct.

c) Statement I is correct and Statement II is not correct. d) Both the Statements I and II are correct.

15. Statement I: Advertising is an impersonal form of communication.
Statement II: Advertising lacks direct feedback.

a) Statement II is correct and I is wrong b) Both the statements are incorrect

c) Statement I is correct and II is wrong d) Both the statements are correct

16. Statement I: The Consumer Protection Act 2019 has replaced the Act 1986 and seeks to widen its scope in addressing consumer concerns.
Statement II: The Consumer Protection Act 2019 provides for Setting up of Consumer Mediation Cell to ensure faster dispute settlements by respective commissions.

a) Both the Statements I and II are not correct. b) Both the Statements I and II are correct.

c) Statement I is correct and Statement II is not correct. d) Statement II is correct and Statement I is not correct.

17. According to Taylor, scientific method should be used to analyse methods of production prevalent under the rule of thumb. The best practices can be kept and further refined to develop a standard which should be followed throughout the organisation. These are the benchmarks, which must be adhered to during production. Its objective is to reduce a given line or product to fixed types, sizes and characteristics; and to establish interchange ability of manufactured parts and products. Scientific management also aims at eliminating unnecessary diversity of products. Most large companies like Nokia, Toyota and Microsoft etc. have successfully implemented these technique of scientific management. This is evident from their large share in their respective markets.
Identify the technique of scientific management highlighted in the above paragraph.

a) Functional foremanship b) Standardisation and Simplification of work

c) Method Study d) Differential Piece Wage System

18. Shyam Lal, the Managing Director of Elpis Ltd, retired after 33 years of service. The responsibility was given to Ram. Ram realised that there was lot of rivalry, confusion and misunderstanding among the departmental heads. He detected inefficiencies, took corrective measures and developed a master plan for the organisation to follow.

c. Which element of the marketing mix is being overlooked by the company? Why is it considered as an important element?

32. Geetika booked two coach seats online through the website of a transportation company from Delhi to Nainital. As per schedule, its departure time was 9.30am. The description on the website stated that the coach would have full onboard services hosted by a steward with individual LCD screen preloaded with movies. One day before the trip, she was informed the departure time would be delayed by two hours as the bus had broken down. When Geetika finally boarded the coach, she was told that it was free seating despite having booked the seats online. She eventually had to sit in a seat that was dirty. She later realised that the LCD monitor screen at her seat was not working. Furthermore, there were no Wi-fi services as promised on board. After the trip, Geetika provided her feedback to the company and requested a refund for the unsatisfactory services rendered. Since the company refused to offer any relief, she has decided to file a case as it is an unfair practice for a business to make misleading or false claims in relation to a consumer transaction.
In the context of the above case:

a. Identify the responsibility of a consumer being fulfiled by Geetika.

b. According to you at which level of redressal machinery should Geetika file a case?

c. Suggest any two reliefs that the court may provide to Geetika in case it is convinced about the genuineness of the complaint.

33. In one of the cases, the Goa State Commission held that "The Consumer Protection Act is not for entertaining or compensating speculative transactions or losses". It held that compensation cannot be given under the Consumer Protection Act to those involved in the sale and purchase of shares, which are commercial transactions. The order follows an appeal by a Mumbai-based stock broker India Infoline Limited against an order of the Goa District Consumer Forum. Initially, the judgement of the Goa District Consumer Forum had awarded damages to Panaji- resident Vaman Nagesh who had lost money in share trading through a stockbroker India Infoline Limited.
In the context of the above case:

a. Why do 'commercial transactions' not fall under tire purview of 'consumer' under the Consumer Protection Act?

b. Why do you think that the above-mentioned case was initially filed in the Goa District Forum by Vaman Nagesh?

c. Where do you think Vaman Nagesh could have filed a further appeal in case he was not satisfied with the judgement passed about his case by the Goa State Commission?

34. Explain with the help of an example 'differential piece wage system' given by Taylor.

35. ABCDEF Ltd. has decided to become the market leader in selling water bottles. The company decides to take care of all the departments. The top management decides to set standards for all the business activities right from the purchase of raw material to manufacturing and packaging of the water bottles.
- Which scientific technique of management is used here?
- Name three advantages of this technique.

36. An Auto Company, Win Ltd. is facing a problem of declining market share due to increased competition from other new and existing players in the market. Its competitors are introducing lower priced models for mass consumers who are price sensitive. The Board of Directors of the Company announced a meeting to discuss the decisions regarding pricing and launching a new range of models, in order to increase the market share of the

giving some odd justifications. After coming back home, Gaurav was feeling very dissatisfied.

   a. Identify and explain the right of the consumer being violated in the above-mentioned case.

   b. Briefly explain any two points highlighting the importance of consumer protection from the consumer's point of view.

24. Himanshu purchased a new car from 'Galaxy Motors' for Rs.25 lakhs. He was offered free insurance for the first year and three free servicing to be availed after the car had covered 5,000 km, 10,000 km and 15,000 km respectively. When Himanshu took the car for the first free servicing, he was told that the car was not new and first service had already been availed on this car. He felt cheated and filled a complaint in the State Commission. Being not satisfied with the decision of the State Commission, after two months he decided to file and appeal against it.

   ○ Can Himanshu appeal against the decision of the State Commission?

   ○ Give reason in support of your answer.

25. State whether the given statement is True or False:

   (a) Management principles are derived after observations and experimentations under controlled conditions.

   (b) Advertisement is less forceful than personal selling.

   (c) Let the buyer beware has now been changed to Let the seller beware.

   (d) National Commission is the apex institution under the Consumer Protection Act, 1986.

26. Name and explain the principle of management which points out the danger and costs of unnecessary labour turnover.

27. Name and explain the principle of management In which workers should be' encouraged to develop and carry out their plans for improvements in the organisation.

28. Explain the following types of plans:

   i. Objective

   ii. Programme

29. State any four reliefs available to the consumers if the consumer court is satisfied about the genuineness of the complaint.

30. Vinod, a school bag manufacturer, aimed to maximize profits by improving his product. After analyzing customer needs, he decided to add a practical feature—a water bottle holder—to the existing bag design. This enhancement not only made the product more convenient for users but also increased its appeal in the competitive market. By addressing a common requirement, Vinod positioned his bags as a better choice, driving higher sales and profits while establishing a reputation for thoughtful innovation.

   i. Identify the marketing management philosophy adopted by Vinod.

   ii. Explain this philosophy on the basis of (a) Main focus and (b) Means and ends.

31. Somya Patel, 35, a fitness trainer, woes about a popular consumer durable brand saying that "They show a lot of advertisements for their products on television, but when you go to the store, you find these things out of stock all the time. Then why should the company put advertisements when they can't meet the demand," she questions. In the context of above case:

   a. Identify the tool of promotion mix being referred to in the above lines.

   b. List any two product-related factors that are likely to affect the choice of channel of distribution.

company. Attending the meeting was not a discretion for the directors and a penalty was announced for not attending the meeting. The following decisions were taken in the meeting:

a. to define the desired future position of the company, as acquiring a dominant position in the market by increasing the market share to 10% in 1 year.

b. to change the criteria for choosing vendors for procuring supplies;

c. to invest in development of the human resources of the organisation by providing training to higher levels by holding seminars and providing on the job training for the supervisory management.

What are standing plans and single use plans? Briefly explain the plans discussed above, which can be classified as standing plans, by quoting the lines.

37. Best Electronics started manufacturing washing machines under the brand name Amaze. Once the washing machines were manufactured, packaged, branded, priced and promoted, they had to be made available to the customers at the right place, in the right quantity and at the right time.

Best Electronics provided for accurate and speedy processing of orders so that the washing machines reach the customers in time, in the right quantity and specifications. They also ensured that the washing machines are physically made available to the customers. Further, Best Electronics arranged for facilities to store the washing machines at different locations near the market to minimize the charges on transportation.

Explain any three components of physical distribution discussed in the above case.

38. Vastra Ltd. is engaged in the manufacturing of apparel. Over the years, it has became a popular brand due to its good product quality and exclusive designing. The company plans to open its own retail showrooms in metropolitan cities in India. In order to meet its financial needs it has offered for subscription an IPO of Rs.4 lakh equity shares in the price band of Rs.430 - Rs.445 each. As per the guidelines of SEBI, the company has provided a complete disclosure of the relevant details in its prospectus.

a. Identify and explain the right of the consumer being fulfilled by the directives of SEBI in the above mentioned case.

b. Briefly explain any two points highlighting the importance of consumer protection from the point of view of the businessmen.

39. Ashish wanted to purchase one LCD TV for his home. He decided to go to various stores selling electronic items to check the available varieties of different brands. One of his friends took him to a manufacturer selling LCD TV at almost half the price. The manufacturer described its various features and insisted that Ashish buys the LCD TV from him. Seeing the features, Ashish decided to buy the TV from him, even when the TV was not having any standardisation mark on it. When Ashish asked for the cash memo, the manufacturer discouraged him, saying that it will attract additional tax. He further told Ashish not to worry and promised that if there would be any problem with the TV, he would replace it immediately. The TV started malfunctioning within a month and Ashish asked for its replacement. The manufacturer refused to replace the LCD TV, telling him that the problem is due to mishandling of the TV. Ashish decided to file a complaint in the Consumer Court against the manufacturer.

i. Identify and explain two consumer rights discussed in the above case.

ii. State two consumer responsibilities that Ashish did not fulfil while buying the LCD TV.

DELHI PUBLIC SCHOOL BULANDSHAHR
HOLIDAY HOMEWORK
WORKSHEET-I (Session: 2025-2026)
Subject: Economics (030)
Class: XII

GENERAL INSTRUCTIONS:
i) The worksheet is divided into 4 sections namely Section A, B, C and D.
ii) Section A contains Objective Type questions carrying 1 mark each.
iii) Section B contains Very Short Answer type questions carrying 3 mark each.
iv) Section C contains Short Answer type questions carrying 4 marks each.
v) Section D contains Long Answer type questions carrying 6 marks each.
vi) All questions are to be attempted.

SECTION - A (OBJECTIVE TYPE QUESTIONS) (Q 1-75)

1. At the time of independence, the literacy rate in India was:
   a) 16%   b) 24%   c) 28%   d) 10%.

2. In 1951-----of the working population was dependent on agriculture:
   a) 60%   b) 72%   c) 80%   d) 75%.

3. India's first official census was undertaken in:
   a) 1951   b) 1947   c) 1881   d) 1921.

4. Railways were started in India in:
   a) 1853   b) 1881   c) 1869   d) 1901.

5. During British period, Indian economy was:
   a) Backward   b) Semi-feudal   c) Both (a) and (b)   (d) None.

6. When was Indian Planning Commission constituted?
   a) August,6,1952   b) March 15, 1950   c) August 15, 1947   d)April 1,1997.

7. What was the period of India's Seventh Five Year Plan?
   a) 1951-56   b) 1956-61   c) 1980-85   d) 1985-90.

8. How many Five year plans in India have been completed so far?
   a) 8   b) 10   c) 11   d) 12.

9. When was NITI Aayog established?
   a) 1991   b) 2001   c) 2011   d) 2015.

10. In Industrial Policy of 1956, ------industries were exclusively reserved for public sector:
    a) 2   b) 7   c) 15   d) 17

11. Which one of the following is not a land reform measure?
    a) Tenancy reform   b) Ceiling on land holdings
    c) Abolition of Zamindari system   d) Fixation of minimum support prices of crops

12. Who is the father of Green Revolution in India?
    a) Pt. J. L. Nehru   b) A.M. Khusro   c) M.S. Swaminathan (d) V.K.R.V. Rao.

13. Industrial Policy Resolution 1956, laid emphasis on the role of :
    a)Public sector   b) Private sector   (c) Joint sector   (d) None

14. Strategy of the growth between the period 1951-90 focused on:
    a)Import substitution   b) Export promotion
    c) Leading role of public sector enterprises   d) Both (a) and (b)

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15. A strategy to earn foreign exchange by promoting domestic exports and making domestic industry competitive in the international market is called:
    a)Inward looking strategy   b) Outward looking strategy
    c) Import substitution strategy   d) None
16. At present how many industries are exclusively reserved for the public sector in India?
    a) 2   (b) 3   (c) 4   (d) 8
17. Under the FEMA:
    a)Provisions related to foreign exchange were simplified and liberalized.
    b) Government initiated the policy of disinvestment.
    c) Custom duties and tariff rates were reduced
    d) Private sector was extended.

18. Which of the following was replaced by competition Act 2002:
    a)MRTP Act   b) FERA   c) Companies Act   d) None.
19. Laissez-faire policy is that policy in which:
    a)There is intervention by the government in the functioning of an economy
    b)There is intervention by the state in the functioning of an economy
    c)There is no intervention by the state in the functioning of an economy
    d)None of these.

20. Aggregation is involved in:
    a) Microeconomics   b) Macroeconomics   c) Both (a) and (b)   d) None
21. Money flows are the reciprocal of:
    a) monetary flows   b) real flows   c) circular flows   d) inventory flows.
22. Depreciation is the:
    a) loss of value of fixed assets in use due to normal wear and tear
    b) loss of value of fixed assets in use due to normal rate of accidental damages
    c) loss of value of fixed assets in use due to foreseen obsolescence
    d) All of these
23. Goods that are ready for use by their final users are called:
    a) intermediate goods   b) final goods   c) capital goods   d) consumer goods.
24. Goods that are used-up in a single act of consumption are called:
    a)durable consumer goods   b) semi-durable consumer goods
    c) non-durable consumer goods   d) non-material consumer goods.
    Expenditure of the producers on the purchase of capital goods causes:
    a) fixed investment   b) inventory investment   c) gross investment   d) net investment
25. Which of the following is an example of normal residents of India:
    a) Foreign workers working in WHO located in India.
    b) The German working as Director in IMF office located in India.
    c) Ambassador in India from rest of the world.
    d) Ambassador of India in rest of the world.
26. Economic Territory of a country in which economic activities of the country generates its domestic income is:
    a) National territory   (b) domestic territory   (c) political territory   (d) geographical territory.
27. Domestic Income is:
    (i) the sum total of factor incomes generated within the domestic territory of a country.
    (ii) generated by normal residents as well as non- residents within the domestic territory of a country.
    (iii) equal to national income when net factor income from abroad is zero.
    (iv) all of these
28. Retirement pension is a kind of :
    a) Transfer payment   b) corporate tax   c) deferred wage   d) none of these.

29. Which of the following is not included in inventory investment?
    a) Stock of finished goods   b) Stock of semi-finished goods
    c) Consumer goods sold to households during the accounting year   d) Stock of raw materials.
30. Operating Surplus is equal to:
    a) COE+ Rent+ Interest+ Profit   b) Rent+ Interest + Profit
    c) COE+ Mixed Income   d) COE+ Rent+ Interest+ Profit+ Mixed Income.

A. GDP Deflator	i) Income generated by own-account workers
B. Mixed income	ii) Household final cons exp + Private Non-Profit institutions serving households Final cons exp
C. Private final consumption expenditure	iii) Price Index
D. National income @ current price	iv) Nominal national income

Alternatives:
a) A-ii), B-i), C-iii), D-iv)   b) A-ii), B-iii), C-iv), D-i)
c) A-iv), B-i), C-ii), D-iii)   d) A-iii), B-i), C-ii), D-iv)

38. Identify the correct sequence of alternatives given in Column II by matching them with respective items in Column I :

Column-I		Column II
A) Zamindari system of land revenue	i)	One in which per capita income is very low
B) Stagnant economy	ii)	The distribution of working population across different sectors of the economy
C) Backward economy	iii)	It worked through the system of middlemen
A) Occupational structure	iv)	One which shows little or no growth in national income

Alternatives:
a) A-ii), B-ii), C-iii), D-iv)   b) A-ii), B-iii), C-iv), D-i)
c) A-iv), B-i), C-ii), D-iii)   d) A-iii), B-iv), C-i), D-ii)

39. Choose the correct alternative showing chronological order of the following events:
i) Twelfth Five Year Plan   ii) Establishing of NITI Aayog

iii) Introduction of economic reforms in India   iv) Setting of Commission for Planning

Alternatives:
a) ii), iv), iii), i)   b) iv), iii), i), ii)
c) i), iv), ii), iii)   d) iii), i), ii), iv)

40. Identify the correct sequence of alternatives given in Column II by matching them with respective items in Column I :

Column-I	Column II
A) Marketable surplus	i) Wasteful consumption of resources
B) Agricultural subsidies	ii) Tax holidays
C) Industrial concessions	iii) Locational flexibility
D) Small-scale industries	iv) Surplus of farmers above his 'own-farm consumption'

Alternatives:
a) A-ii), B-ii), C-iii), D-iv)   b) A-ii), B-iii), C-iv), D-i)
c) A-iv), B-i), C-ii), D-iii)   d) A-iii), B-i), C-ii), D-iv)

41. Identify the correct sequence of alternatives given in Column II by matching them with respective items in Column I :

Column-I	Column II

31. Expenditure by the foreigners on the domestically produced final goods and services is called:
a) exports   b) imports   c) net exports   d) none of these.

32. Value Addition is equal to:
a) V.O.O. + Intermediate   b) Value of output – Intermediate consumption
c) V.O.O. X Intermediate   d) Value of output / Intermediate consumption.

33. The sum total of factor incomes earned by normal residents of a country during the period of one year is:
a) National income   b) domestic income   c) National product   d) both (a) and (c)

34. Identify the correct sequence of alternatives given in Column II by matching them with respective items in Column I :

Column-I	Column-II
1. Macroeconomics	a) Capital formation
2. General equilibrium	b) Demand for all the goods and services in the economy
3. Aggregate demand	c) Simultaneous equilibrium across all markets in the economy
4. Investment expenditure	d) studies equilibrium level of GDP

Alternatives:

a) A-ii), B-i), C-iii), D-iv)   b) A-ii), B-iii), C-iv), D-i)
c) A-iv), B-iii), C-ii), D-i)   d) A-iii), B-i), C-ii), D-iv)

35. Identify the correct sequence of alternatives given in Column II by matching them with respective items in Column I :

Column-I	Column-II
A. Real flow	i) Static concept
B. Flow.	ii) flow of goods and services between firms and households
C. Money flow	iii) variable measured over a period of time
D. Stock	iv) Nominal flow

Alternatives:
a) A-ii), B-i), C-iii), D-iv)   b) A-ii), B-iii), C-iv), D-i)
c) A-iv), B-i), C-ii), D-iii)   d) A-iii), B-i), C-ii), D-iv

36. Identify the correct sequence of alternatives given in Column II by matching them with respective items in Column I :

Column-I	Column-II
A. NDP@fc	i) National Income .
B. NDP@mp	ii) GDP@fc- Depreciation + Net Indirect Taxes
C. NNP@fc	iii) Domestic Income
D. GNP@fc	iv) NDP@mp + Depreciation + Net Indirect Taxes + NFIA

Alternatives:

a) A-ii), B-i), C-iii), D-iv)   b) A-ii), B-iii), C-iv), D-i)
c) A-iv), B-i), C-ii), D-iii)   d) A-iii), B-i), C-i), D-iv)

37. Identify the correct sequence of alternatives given in Column II by matching them with respective items in Column I :

Column-I	Column-II

56. Assertion (A): The land reforms initiated by the govt intended to support the tillers of the soil.
57. Reason (R): The intermediaries had been exploiting the actual cultivators of the soil.
58. Assertion (A): Government has decided to develop Navratnas as global players in their respective areas of industrialization.

    Reason (R): Navratnas were highly efficient profit making PSUs and were revenue generators for the government.
59. Assertion (A): Following liberalization, reduction in Tax rates led to fall in tax evasion.

    Reason (R): Reduced tax rate paves way for tax compliance and therefore, greater tax revenue for government.

    Read the following statements carefully:
60. Statement 1: Macroeconomics studies such economic issues that concern the welfare of all residents of a country.

    Statement 2: Microeconomics studies how government can improve the state of economy of a country.
61. Statement 1: Theory of money comes under the scope of microeconomics.

    Statement 2: Study of depression is a subject matter of macroeconomics.
62. Statement 1: Circular Flow of income does not take place in case of closed economy.

    Statement 2: Flow of income is circular in a Two-sector economy.
63. Statement 1: Real Flow refers to the flow of factor services from firms to households.

    Statement 2: Flow of goods and services and factors of production across different sectors in a barter economy is known as capital flow.
64. Statement 1: NDP fc is also known as Domestic Income.

    Statement 2: NDPfc is lee than NNPfc when net factor income from abroad is positive.
65. Statement 1: GDPmp is a territorial concept.

    Statement 2: GDPmp excludes net indirect taxes.
66. Statement 1: Sale and purchase of second hand goods is not included in the estimation of GDP.

    Statement 2: Rise in national income always leads to a rise in per capita income.
67. Statement 1: Gross Domestic Product is the sum total of the gross market value of all the final goods and services added by all the sectors in the economy during a fiscal year.
68. Statement 1: The TaTa Iron and Steel Company (TISCO) was incorporated in 1907.

    Statement 2: The opening of Suez Canal in 1869 reduced the cost of transportation and made access to the Indian market easier.
69. Statement 1: 1921 is regarded as the 'Year of Great Divide'.

    Statement 2: Till 1921, population growth in India was never consistent.
70. Statement 1: Discovery of more and more resources along with development of innovative technology leads to increase in GDP.

    Statement 2: A consistent increase in GDP leads to a consistent increase in the flow of goods and services in the economy over a long period of time.
71. Statement 1: Equity implies that economic growth is related to social justice.

    Statement 2: Equitable distribution would mean that every individual in the society gets the same share in the country's national income.
72. Statement 1: The gains of Green Revolution excluded small and marginal farmers.

    Statement 2: HYV technology required expensive inputs which were beyond the reach of marginal farmers.
73. Statement 1: Subsidies add financial burden on a nation.

    Statement 2: Complete removal of subsidies may violate the aim of equitable distribution of income.
74. Statement 1: Devaluation is the fall in the value of domestic currency in relation to foreign currency.

    Statement 2: In case of currency devaluation, foreign currency can now less goods in the Indian market.
75. Statement 1: In India, financial sector is regulated and controlled by the RBI.

    Statement 2: Prior to liberalization, Tax structure was quite complex and tax rates were quite high.

A) WTO	i)	Provides short-term loans to BOP problems
B) RBI	ii)	Is a multilateral trade negotiations body
C) IMF	iii)	Facilitates lending for reconstruction and development
D) IBRD	iv)	Is the Central Bank of India

Alternatives:
a) A-ii), B-ii), C-iii), D-iv)   b) A-ii), B-iv), C-i), D-iii)
c) A-iv), B-i), C-ii), D-iii)   d) A-iii), B-i), C-ii), D-iv)

Read the following statement Assertion (A) and Reason(R)

Choose one of the correct alternatives given below:

Alternatives:

(a) Both Assertion (A) and Reason (R) are true and reason (R) is the correct explanation of (A).

(b) Both Assertion (A) and Reason (R) are true and Reason (R) is not the correct explanation of (A)

(c) Assertion (A) is true but Reason (R) is false.

(d) Assertion (A) is false but Reason (R) is true

42. Assertion (A): In USA from 1929 to 1933, unemployment rate rose from 3%to 25%. Over the same   period aggregate output in USA fell by about 33%.

    Reason (R): The Great depression of 1929 and the subsequent years saw the output and employment levels in the countries of Europe and North America fall by huge amounts.

43. Assertion (A): Savings are zero in case of two- sector economy.

    Reason (R): Households spend entire factor income received from firms on cons of goods and services.

44. Assertion (A): Total production is equal to total consumption in case of circular flow in a two-sector economy.

    Reason (R): Household sector supplies factor services only to firms and the firms hire factor services only from households.

45. Assertion (A): Real Flow is also known as Normal flow.

    Reason (R): Real flow involves flow of goods and services between firms and households.

46. Assertion (A): Domestic income is a territorial concept.

    Reason (R): Domestic income includes value of final goods and services produced in the entire   world.

47. Assertion (A): Domestic income is equal to National income in case of Closed economy.

    Reason (R): Closed economy has no economic relationship with rest of the world.

48. Assertion (A): Value added method, Income method and Expenditure method are three different   methods to measure the national income.

    Reason (R): Production, Income and Expenditure are three phases of circular flow of income.

49. Assertion (A): Nominal GDP is always equal to Real GDP.

    Reason (R): Real GDP is a better measure to make periodic comparison in the physical output of   goods and services over different years as compared to Nominal GDP.

50. Assertion (A): Spread of railways opened up new opportunities of economic growth for Britain.

    Reason (R): Spread of railways led to expansion of market for the British products in India.

51. Assertion (A): The British government established a monopoly control over India's foreign trade.

    Reason (R): The opening of Suez Canal did not act as a determinant in promoting trade with Britain.

52. Assertion (A): Equal distribution and equitable distribution of income mean the same thing.

    Reason (R): GDP growth is a common goal of Five Year Plans in India.

53. Assertion (A): The planning policies during the period 1950-1990 failed to eradicate poverty or curb inflation in the Indian economy.

    Reason (R): The strategy of growth envisaged by the planners proved to be a questionable dispensation for the growth of Indian economy to the desired extent.

54. Assertion (A): Inward looking trade strategy is a policy of 'import substitution' and protection to the domestic industry through import restriction and import duties.

55. Reason (R): Outward looking trade strategy is a policy of 'export promotion' through competitive production environment in the domestic economy.

year ago and a low of 6.1 % in FY 2010. This, say economists, will negatively impact household disposable income and may hit consumer demand and savings and investments by the household.

A faster rise in tax burden led to a steady decline in the portion of gross domestic product that accrues to the household. Household disposable income was equivalent to around 85% of GDP in FY 2019 down from 85.5% a year ago and a high of 90% in FY 2009.

In the same period, India gross domestic product at current prices grew at a Compound Annual Growth Rate (CAGR) of 11% while private final consumption expenditure grew at a CARG of 11.7% while household savings grew at a CAGR of 8.6%.

"In general household held up the consumption by cutting back of savings and increase in borrowings that showed up in a boom in retail credit in the economy", says Dhananjay Sinha, head research Systematic Group.

i) Increase in indirect taxes on goods will cause -------(increase / decrease) in disposable income of households.

ii) Consumers' tendency to demand more for consumption in spite of increase in tax burden is due to :
   a) reduction in savings   b) rise in borrowings   c) both (a) and (b)   d) neither (a) nor (b)

iii) Difference between indirect tax and subsidies represents ------------ (Net indirect tax / Gross indirect tax)

iv) Subsidies are financial assistance by government to an enterprise which is given:
   a) as compensation for selling goods below open market price   b) to encourage exports
   c) to encourage employment   .   d) all of these.

78.   What are the main features of:
      (a) Capitalist economy   (b) Socialist economy   (c) Mixed economy.
79.   Distinguish b/w stock and flow. Between net investment and capital which is a stock and which is a flow?
80.   With suitable examples, distinguish between intermediate and final goods.
81.   'GDP as an index of welfare may understate or overstate welfare'. Explain the statement using   examples of a positive and negative externalities.

Use the following information of an imaginary country:

Year	2014-15	2015-16	2016-17
Nominal GDP	6.5	8.4	9
GDP Deflator	100	140	125

   i)   For which year is real GDP and Nominal GDP same and why?
   ii)   Calculate real GDP for the given years. Is there any year for which Real GDP falls?

82.   Explain the changes that were observed in India's occupational structure during the British rule.
83.   What was the two-fold motive behind the systematic deindustrialization affected by the British in pre-independent   India?
84.   Explain any two shortfalls of the industrial policy under the British rule.
85.   Explain 'growth with equity' as a planning objective.
86.   What were the features of IPR 1956?
87.   What is WTO? Explain briefly the expected benefits of WTO.
88.   What is outsourcing? Why is it good for India?

SECTION - C (SHORT ANSWER TYPE QUESTIONS) 4 Marks

89.   Describe the four major sectors in an economy according to macroeconomics point of view.
90.   Explain the concept of depreciation. How is it different from capital loss?
91.   Distinguish between consumer goods and producer goods.
92.   Using a suitable numerical example, Distinguish between Nominal GDP and Real GDP. Which of the two is better and why?
93.   What is GNP deflator? How is it measured?
94.   What do you mean by the problem of double counting ? How can it be avoided? Explain with suitable numerical example.
95.   Explain briefly the steps involved in the calculation of Nation Income by Expenditure method. Also state any two precautions of it.

SECTION - D (LONG ANSWER TYPE QUESTIONS) 6 Marks

In the light of the given statements, choose the correct alternative from the following:

a) Statement 1 is true and statement 2 is false
b) Statement 1 is false and statement 2 is true
c) Both statements 1 and 2 are true
d) Both statements 1 and 2 are false

SECTION - B (SHORT ANSWER TYPE QUESTIONS) 3 Marks

76. Read the following text carefully and answer the given questions on the basis of the same and common understanding:

The stabilization and structural adjustment measures, initiated under the 1991 "Economic Reforms" mark a watershed moment in India's economic policies. For almost three decades since independence, India's development strategy and economic policies were guided by the objectives of accelerating the growth of output and employment with social justice and equity.

Ever since the 1970's it was realized that many of the regulations on economic activities have outlived their usefulness and were in fact hampering economic growth and development. In response to this, the government initiated some milder liberalization reforms for almost a decade since the early 1980's.

However, the Indian economy soon had to face the gulf crisis and consequently:

i) The uncertainties about the oil prices;
ii) The external payment problems;
iii) The serious inflationary pressures;
iv) The scarcities of essential commodities;
v) The deterioration of fiscal discipline, etc.

These led to the Indian economy on the verge of economic crisis.

In response to this emerging crisis, the Government initiated a set of stabilization and structural reforms like:

i) Reduction in fiscal deficit;
ii) Containment of growth in money supply;
iii) An exchange rate adjustment system policy was to bring the growth of aggregate demand in line with long term growth path of the economy.

In conjunction, the structural adjustment measures like;

i) Industrial de-licensing;
ii) Liberalization of policy regime governing international trade
iii) Deregulation of financial sector

Were taken to improve the supply side of the economy. This shifted the long –term growth path of the economy itself completely.

https://niti.gov.in/planningcommission.gov.in/docs/reports/genrep/arep9099/at9495.htm

a) Briefly outline any two reasons for the initiation of Economic Reforms in 1991.
b) Government introduced a set of stablisation and structural reforms to solve the economic crisis. State the key initiatives and objectives of theses policies adopted by the Government of India.

77. Read the following article and answer the questions on the basis of the same

The latest increases in indirect taxes on commodities like diesel, petrol and alcohol by the central and various state governments is likely to lead a further rise in the tax burden on India's Gross Domestic Product (GDP), in Financial Year 2019, Indirect taxes (net of subsidies) accounted for nearly 10 % of GDP, up from 9. 3 % a

S. No.	Particulars	₹ in crore
i)	Wages and salaries	1,200
ii)	Net current transfers to abroad	(-) 20
iii)	Rent	100
iv)	Interest paid by the production units	130
v)	Corporation Tax	50
vi)	Contribution to social security schemes by employers	250
vii)	Dividends	100
viii)	Undistributed profits	20
ix)	Net Factor Income to abroad	60
x)	Consumption of fixed capital	120

104. Calculate National income:

S. No.	Particulars	₹ in crore
i)	Private final consumption expenditure	300
ii)	Gross domestic fixed capital formation	70
iii)	Opening stock	15
iv)	Closing stock	25
v)	Mixed Income of Self-employed	7,00
vi)	Government final consumption expenditure	150
vii)	Consumption of fixed capital	10
viii)	Net Indirect Taxes	25
ix)	Net Factor Income to abroad	(-) 5
x)	Exports	10
xi)	Imports	20

105. Find out Value Added by firm 'B' from the following data and also write any three precautions to calculate national income by income method.

	(Items)	(Rs. in Lakh)
(i)	Purchases by firm B from firm A	30
(ii)	Sales by firm B to firm C	25
(iii)	Sales by firm B to households	35
(iv)	Opening stock of firm B	05
(v)	Opening stock of firm C	10
(vi)	Closing stock of firm B	10
(vii)	Purchases by firm B from firm D	15
(viii)	Exports by firm B	20

106. From the following data calculate national Income by (a) Income method, and (b) Expenditure method:

	(Items)	(Rs. in crores)
(i)	Government final consumption expenditure.	300
(ii)	Subsidies	10
(iii)	Rent	400
(iv)	Wages & Salaries	400
(v)	Indirect Tax	60
(vi)	Private final consumption expenditure	600
(vii)	Gross domestic capital formation	120

96. Define liberalization. Explain briefly the fiscal reforms under it.
97. Why was public sector given a leading role in industrial development during the planning period?
98. Why it was necessary for a developing country like India to follow self-reliance as a planning objective?

99. Were there any positive contributions made by the British in India? Discuss.

100. Calculate 'Net National Product at Factor Cost" from the following data:

S. No.	Particulars	Rs in crore
i)	Net domestic fixed capital formation	120
ii)	Private final consumption expenditure	400
iii)	Consumption of fixed capital	120
iv)	Net factor income to abroad	(-) 10
v)	Government final consumption expenditure	300
vi)	Net indirect taxes	100
vii)	Net imports	30
viii)	Change in stock	(-) 20

101. Calculate 'National Income from the following data:

S. No	Particulars	(Rs in crores)
i)	Government final consumption expenditure	200
ii)	Net change in stock	(-) 20
iii)	Net domestic capital formation	220
iv)	Indirect tax	240
v)	Consumption of fixed capital	70
vi)	Private final consumption expenditure	1,200
vii)	Net imports	40
viii)	Net factor income to abroad	10
ix)	Subsidies	50

102. Calculate 'National Income from the following data:

S. No	Particulars	(Rs in crores)
i)	Sales by firm A	300
ii)	Purchases from firm B by firm A	120
iii)	Purchases from firm A by firm B	180
iv)	Sales by firm B	600
v)	Closing stock of firm A	60
vi)	Closing stock of firm B	105
vii)	Opening stock of firm A	75
viii)	Opening stock of firm B	135
ix)	Indirect taxes by both firms	90

103. Calculate National income:

(viii)	Social security contributions by employers	55
(ix)	Royalty	25
(x)	Net factor income paid to abroad	30
(xi)	Interest	20
(xii)	Net domestic capital formation	110
(xiii)	Profit	130
(xiv)	Net exports.	70

107. Calculate 'Value Added by Firm X and Firm Y' from the following data and also write any three precautions to calculate national income by expenditure method.

	(Items)	(Rs. in Lakh)
(i)	Sales by firm X to households	100
(ii)	Sales by firm Y	500
(iii)	Purchases by households from firm Y	300
(iv)	Exports by firm Y	50
(v)	Change in stock of firm X	20
(vi)	Change in stock of firm Y	10
(vii)	Imports by firm X	70
(viii)	Sales by firm Z to firm Y	250
(ix)	Purchases by firm Y from firm X	200

108. From the following data calculate National Income by (a) Income method, and (b) Expenditure method:

	(Item)	(Rs. in Crore)
(i)	Private final consumption expenditure	300
(ii)	Mixed income of self employed	85
(iii)	Gross domestic fixed capital formation	70
(iv)	Opening stock	15
(v)	Compensation of employees	200
(vi)	Closing Stock	25
(vii)	Government final consumption expenditure	150
(viii)	Operating surplus	200
(ix)	Consumption of fixed capital	10
(x)	Net indirect taxes	25
(xi)	Net factor income from abroad	(-5)
(xii)	Exports	10
(xiii)	Imports	20

1. _____ is a popular data-science library of Python.

2. A _____ is a Pandas data structure that represents a 1 D array like object.

3. A _____ is a Pandas data structure that represents a 2 D array like object.

4. You can use numpy._____ for missing data.

5. To specify data type for a Series object, _____ argument is used.

6. The _____ function on Series object returns total elements in it including NaNs.

7. The _____ function on Series object returns only the count of non-NaN values in it.

8. Series is _____ mutable.

9. Series is not _____ mutable.

10. Dataframe is _____ mutable as well a s _____ mutable.

11. To access values using row labels you can use DF._____.

12. To access individual value, you can use DF._____ using row/column index labels.

13. To access individual value, you can use DF._____ using row/column integer position.

14. The rename( ) function requires _____ argument to make changes in the original dataframe.

15. CSV files are text files
    a. True   b. False

16. Default delimeter in CSV is _____.
    a. ;   b. :   c. | d. .

17. A CSV file can take as delimeter
    a. ;   b. | c. \t   d. @   e. All of the above Show Answer

18. If you want to read top 20 rows of data from CSV file, which argument would you give to read_csv()?
    a. Rows   b. Nrows   c. Header   d. Head

1. Write code to create a Series object using the Python sequence [4, 6, 8, 10]. Assume that Pandas is imported as alias name pd.

2. Write code to create a Series object using the Python sequence (11, 21, 31, 41). Assume that Pandas is imported as alias name pd.

3. Consider the given DataFrame 'Employees':

Name	Employee_ID	Department
Alice	EMP001	HR
Bob	EMP002	Sales
Carol	EMP003	IT
David	EMP004	Marketing

Write suitable Python statements for the following operations:
i) Add a column called 'Salary' with the following data:
    [55000, 60000, 65000, 58000].

ii) Include a new employee named 'Eve' with Employee_ID 'EMP005', working in the 'Finance' department, and a salary of 62000.

iii) Change the name of the 'Employee_ID' column to 'ID'.

4. Ms. Ritika conducted an online assessment and stored the details in a DataFrameresult as given below:

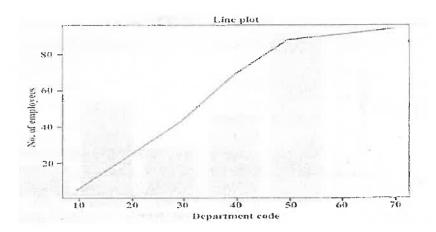|	Name	Score	Attempts	Qualify
a	Atulya	12.5	1	yes
b	Disha	9.0	3	no
c	Kavita	16.5	2	yes
d	John	15.0	1	no

Answer the following questions:
(i) Predict the output of the following Python statement:
    print(result.loc [:,'Attempts'] > 1)
(ii) Write the Python statement to display the last three records.
(iii) Write Python statement to display records of 'a' and 'd' row labels.
(iv) Write suitable Python statement to retrieve the data stored in theFile, 'registration.csv' into a DataFrame, 'regis'.

5. (a) Write a program in Python Pandas to create the following DataFrame

	country	population	percent
IT	Italy	61	0·83
ES	Spain	46	0·63
GR	Greece	11	0·15
FR	France	65	0·88
PO	Portugal	10	0·14

(b) Perform the following operations on the DataFrame:
(i) Display the columns country and population.
(ii) Display all the rows where population is more than 40.
(iii) Delete the last 2 rows.

1. | Name the plot in which bars need not to be of the same width.
2. | Name the plot in which bars cannot touch each other.
3. | Name the function which is used to plot the line plot.
4. | Which graphs are used to show results of continuous data, such as: weight, height, how much time etc?
5. | Name the method which is used to plot the horizontal bar plot.
6. | Name the plot which needs only one set of values for plotting.
7. | Name the plot which Indicates distribution of discrete variables.
8. | Name the method which is used to set the label for y axis.
9. | Write command to install matplotlib.
10. | Write command to add/import matplotlib.pyplot library into your program.
11. | What is the minimum number of arguments required for plot() function in matplotlib?   a. 1   b. 2   c. 3   d. 4
12. | _____ is the function to save the graph.
     a. Savefig()   b. Savefigure() c. Savegraph()   d. Savechart()
13. | The command used to give a heading to a graph is _____
     a. plt.show() b. plt.plot()   c. plt.xlabel() d. plt.title()
14. | Using Python Matplotlib _____ can be used to count how many values fall into each interval.
     a. line plot   b. bar graph   c. histogram   d. None of these
15. | Using Python Matplotlib _____ can be used to display information as a series of data points.
     (A) line chart   (B) bar graph   (C) histogram
16. | Which graph should be used where each column represents a range of values, and the height of a column corresponds to how many values are in that range?
     a. plot b. line c. bar d. histogram

Chapter: Data Visualization using Matplotlib   **Worksheet – 2**

1. Write a Python code to draw a histogram of the marks obtained by 20 students out of 100. (Take bins=5)

2. Write a Python code to draw a line plot for the number of students in each class from class 1 to 5. Add appropriate title and x and y labels.

3. Write a Python code to draw a bar plot for the number of fruits in 6 shops from shop1 to shop6. Add appropriate title and x and y labels.

4. Consider the following graph. Write the code to plot it.

Line plot

No. of employees (y-axis): 80, 60, 40, 20
Department code (x-axis): 10, 20, 30, 40, 50, 60, 70

5. Consider the following code:

```
import matplotlib.pyplot as m
x=[ 1.0, 2.0, 3.0, 4.0, 5.0 ]
y=[250,330,180,450,80]
m.plot(x,y)
m.xlabel("Days of week")
m.ylabel("Number of people")
m.title(" Line Plot")
m.show()
```
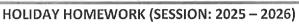
Draw a line graph which will be produced when the above code is executed.

Chapter 1– Management of Sporting Events

Section A: Multiple Choice Questions (1 mark each)

1. Which of the following is not a type of sports tournament?

a) Knock-out

b) League

c) Intramural

d) Combination

2. The term "fixture" in sports refers to:

a) Lighting arrangements

b) Scheduling of matches

c) Rules of the game

d) Audience arrangements

3. A league tournament is also known as:

a) Knock-out tournament

b) Round-robin tournament

c) Challenge tournament

d) Elimination tournament

4. The formula for number of matches in a single league is:

a) $N(N+1)/2$

b) $N(N-1)/2$

c) $N/2$

d) $N+1$

5. The term "Bye" in sports fixture refers to:

a) Losing a match

b) Getting injured

c) Not playing a round

d) Referee's decision

6. Which committee is responsible for keeping record of results?

a) Finance committee

b) Publicity committee

c) Recorders & Results committee

d) Transport committee

7. Which of the following is a pre-tournament responsibility?

a) Awarding prizes

b) Preparing budget

c) Publishing results

d) Holding closing ceremony

8. The combination tournament is useful when:

a) Few teams are participating

b) Many teams are participating

c) Only 2 teams are playing

d) Game is played indoor only

9. An intra-mural competition involves:

a) Teams from outside schools institution

b) Players from within the same

c) National teams

d) Professional clubs

10. Which of the following is not a committee in event management?

a) Reception committee

b) Equipment committee

c) Disciplinary committee

d) Trophy designing committee

11. The formula for total number of byes in a knock-out tournament is:

a) N+1

b) Next power of 2 – N

c) N(N-1)/2

d) 2N-1

12. The main aim of organizing a sports event is:

a) Collecting money

b) Providing entertainment

c) Promoting physical activity

d) Increasing followers

13. In which type of tournament does a team continue playing until they lose?

a) League

b) Knock-out

c) Round robin

d) Challenge

14. Which committee is responsible for food and refreshments?

a) Catering committee

b) Reception committee

c) Lodging committee

d) Record committee

15. Which of the following is not a duty of the organizing committee?

a) Managing audience

b) Deciding venue

c) Conducting matches

d) Playing the matches

16. The advantage of a league tournament is:

a) Less time-consuming

b) Suitable for fewer teams

c) Each team gets equal opportunity

d) Cheaper to organize

17. Which committee is responsible for contacting the press and media?

a) Technical committee

b) Publicity committee

c) Result committee

d) Medical committee

18. Number of matches in a knock-out tournament with 8 teams:

a) 7

b) 6

c) 8   d) 15

19. In league system, if 6 teams are participating, total number of matches are:

a) 15   b) 12

c) 6   d) 18

20. Which of these is not a purpose of a fixture?

 a) Avoid confusion   b) Ensure fair play

c) Save time   d) Train athletes

Section B: Short Answer Questions (2 Marks each)

(Answer any 10 questions)

1. Define "tournament" and its importance in sports.

2. What is a "fixture"?

3. Name two types of league tournaments.

4. State any two objectives of intramurals.

5. Mention any two responsibilities of a technical committee.

6. What is a knock-out tournament?

7. Define "bye" and explain its relevance.

8. What is the importance of record keeping in sports events?

9. Give two functions of the equipment committee.

10. List two differences between knock-out and league tournaments.

11. What are extramurals?

12. Give any two pre-tournament responsibilities of the organizing committee.

Section C: Short Answer Questions (3 Marks each)

(Answer any 10 questions)

1. Explain any three types of tournaments.

2. What are the steps in planning a sporting event?

3. Write three functions of the publicity committee.

4. How are fixtures prepared for a league tournament?

5. Explain any three duties of the finance committee.

6. Mention three advantages of knock-out tournaments.

7. Describe three responsibilities of the reception committee.

8. Write a short note on combination tournaments with example.

9. What are the post-tournament responsibilities of an organizing committee?

10. How is a league tournament different from a knock-out tournament?

Section D: Case Study-Based Questions (4 Marks each)

(Attempt both)

Case Study 1:

During your school's Annual Sports Day, 16 teams participated in a knock-out football tournament. You were a part of the organizing committee and were tasked with preparing the fixture and assigning byes.

Questions:

a) How many matches will be played in total?

b) How many byes will be given?

c) Mention one advantage and one disadvantage of a knock-out tournament.

d) Suggest one committee that would manage the refreshments.

Case Study 2:

A school is planning to host an inter-school athletic meet. The Principal has asked the Physical Education teacher to form different committees.

Questions:

a) List any four committees to be formed.

b) Mention one duty of each committee.

c) Why is planning important in sports events?

d) Name the type of tournament best suited for athletics events.

Section E: Long Answer Questions (5 Marks each)

(Answer any 5 questions)

1. Explain the role of various committees in organizing a sports event.

2. Describe the procedure for organizing a knock-out tournament with 13 teams.

3. Differentiate between intramural and extramural competitions with examples.

4. What are the merits and demerits of league tournaments?

5. Explain the responsibilities before, during, and after a sports event.

6. Draw a fixture for 6 teams using the league method.

7. How does proper event management contribute to the success of sports events?

8. Prepare a budget plan for organizing a two-day school sports meet.

Chapter 2 – Children and Women in Sports
Section A: Multiple Choice Questions (1 mark each)

1. What is the primary reason for considering physical activity important for children?

a) Entertainment

b) Physical development

c) Academic performance

d) Fashion

2. Which condition is characterized by a curvature of the spine?

a) Lordosis

b) Flat foot

c) Scoliosis

d) Kyphosis

3. Flat foot is caused due to:

a) Weak abdominal muscles

b) High-arched foot

c) Lack of arch in the foot

d) Tight hamstrings

4. Which one is not a spinal deformity?

a) Scoliosis

b) Flat foot

c) Kyphosis

d) Lordosis

5. Which is an advantage of physical activity for women?

a) Reduced metabolism

b) Increased stress

c) Hormonal imbalance

d) Improved bone density

6. Knock knees are a condition where:

a) Knees bend outward

b) Feet turn inward

c) Knees touch and ankles are apart

d) Spine curves to one side

7. Which exercise is best for correcting bow legs?

a) Cycling

b) Horse riding

c) Walking on straight lines

d) Side stretching

8. One reason for low participation of women in sports is:

a) High interest in sports

b) Equal opportunities

c) Lack of encouragement

d) Strong community support

9. Menarche is:

a) End of puberty

b) Beginning of puberty in boys

c) First menstruation

d) Muscle fatigue

10. A child with a hunched back may be suffering from:

a) Lordosis

b) Scoliosis

c) Kyphosis

d) Bow legs

11. Which factor affects motor development in children?

a) Type of school

b) Physical activity

c) Siblings

d) Gender only

12. Which of the following is not a cause of scoliosis?

a) Bad posture

b) Heredity

c) Proper nutrition

d) Injury

13. Women athletes are more prone to:

a) Flat foot

b) ACL injuries

c) Scoliosis

d) Menstrual cramps

14. The term Menstrual Dysfunction includes:

a) Menopause

b) Amenorrhea

c) Lordosis

d) Myopia

15. The best way to correct flat foot is:

a) Jumping

b) Skipping

c) Walking on toes

d) Walking on heels

16. One reason for motor development being better in physically active children:

a) Good sleeping habits
coordination

b) Physical activity improves

c) Interest in studies

d) Watching sports

17. Lordosis affects which body part?

a) Neck

b) Lower back

c) Arms

d) Legs

18. Post-menstrual syndrome in athletes can result in:

a) Increased flexibility

b) Improved endurance

c) Mood swings and cramps

d) Better sleep

19. Children should avoid which activity if suffering from scoliosis?

a) Swimming

b) Heavy weight lifting

c) Running

d) Cycling

20. Which training method is best to improve motor fitness in children?

a) Yoga

b) Meditation

c) Circuit training

d) Aerobics only

Section B: Short Answer Questions (2 marks each)

(Attempt any ten questions.)

1. Define motor development.

2. What is Lordosis?

3. Mention any two causes of Flat Foot.

4. Define Menarche.

5. Write any two causes of scoliosis.

6. What do you understand by Amenorrhea?

7. List two exercises that can help correct knock knees.

8. Write two benefits of exercise for women.

9. Define motor fitness.

10. Name two spinal deformities found in children.

11. What is the impact of exercise on pre-natal women?

12. Mention two psychological benefits of physical activity in children.

Section C: Short Answer Questions (3 marks each)

(Attempt any Eight questions.)

1. Explain the effects of exercise on menstruation.

2. Differentiate between Bow Legs and Knock Knees.

3. List three causes of low participation of women in sports.

4. What are the corrective measures for Lordosis?

5. Write three advantages of physical activity for children.

6. How does physical activity impact motor development in children?

7. Describe three problems faced by women athletes.

8. Suggest three exercises to prevent scoliosis.

9. Explain the term Post-Menstrual Syndrome.

10. What steps can be taken to increase women's participation in sports?

Section D: Case Study-Based Questions (4 marks each)

Case Study 1:

Rekha, a 14-year-old girl, has shown signs of low self-confidence and poor posture. Her PE teacher noticed a sideways curvature in her spine and suspected scoliosis.

Q1. Based on the case, answer the following:

a) What is scoliosis?

b) Suggest two causes of scoliosis.

c) Mention two exercises to help correct this condition.

d) How can physical activity help in boosting Rekha's confidence?

Case Study 2:

A physical education teacher noticed that many girls in her class avoid games during certain days of the month. She wants to create awareness and promote sports participation without affecting health.

Q2. Based on the case, answer the following:

a) What phase is being referred to?
b) Name one menstrual disorder and define it.
c) How can teachers support girls during menstruation?
d) Suggest any one way to create awareness regarding menstrual health in schools.

Section E: Long Answer Questions (5 marks each)

(Attempt any four questions.)

1. Explain in detail the role of physical activity in correcting postural deformities.
2. Discuss the causes and preventive measures for Flat Foot and Knock Knees.

3. Describe the impact of physical activity on women with respect to hormonal balance and bone health.

4. Elaborate on the reasons behind low participation of women in sports and suggest solutions.

5. What is motor development? Explain the factors affecting motor development in children.

UNIT-3
YOGA AS PREVENTIVE MEASURE FOR LIFESTYLE DISEASE
Section A: Multiple Choice Questions (1 mark each)

1. *Yoga sutra* was compiled by
(a) Patanjali

(b) Gheranda

(c) Shivananda

(d) Svatmarma

2. According to Patanjali, the definition of *Asana* is
(a) control of sense organs

(b) sitting in a cross-legged position

(c) sitting in a comfortable position

(d) control of diet and water intake.

3. How many types of *Asana*s are there in Yoga?
(a) 3

(b) 4

(c) 5

(d) 12

4. Which *Asana* is good for the performance of the Excretory System?
(a) *Sukhasana*

(b) *Tadasana*

(c) *Pawanmuktasana*

(d) *Virabhadrasana*

5. According to WHO the criteria for overweight as per BMI is
(a) 18.5 –24.9

(b) 25 -29.9

(c) 30 –34.9

(d) 35-39.9

6. Which *asana* improves efficiency of liver?
(a) *Vajrasana*

(b) *Makrasana*

(c) *Ardhamatsyendrasana*

(d) *Tadasana*

7. Which *asana* is suggested to relax muscles after performing *Vajarasana*?
(a) *Sukhasana*

(b) *Savasana*

(c) *Sarvangasana*

(d) *Virabhadrasana*

8. Which gland is associated with Diabetes
(a) Endocrine glands

(b) Pituitary

(c) Pancreas

(d) Hypothalmus

9. *Bhujangasana* is also known as
(a) Dog posture

(b) Child posture

(c) Cobra posture

(d) Reverse Boat posture

10. What causes an Asthma Attack?

(a) Allergy (b) Smoke

(c) Exercise (d) All of the

Section B: Short Answer Questions (2 marks each)

Q.1 Draw a stick diagram of any two asanas to prevent obesity.

Q.2. State the procedure of Ardhachakrasana.

Q3. Mention any four benefits of Yoga.

Q4. Design a free hand drawing of any two asanas to prevent back pain.

Q.5. Write the procedure of Katichakrasana.

Section C: Short Answer Questions (3 marks each)

1. How is yoga helpful in improving lifestyle?

2. How do *Asanas* help bones and joint to grow stronger?

3. Write the procedure of practicing *Vajarasana*?

4. Explain how *Trikonasana* is helpful in management of obesity?

5. What modification can be done to learn *Ardhamatsyendrasana*

Section D: Case Study-Based Questions (4 marks each)

1.The above pose can be identified as

(a) vajrasana (b) trikonasana (c) Chakrasana (d) padmasana

2.This asana is used to cure

(a) Obesity (b) diabetes (c) Knee pain (d) Asthma

3.Normal Blood pressure is an adult is _____

(a) 120/80mm (b) 140/90mm (c) 80/100mm (d) 100/80mm

4.This asana is contraindicated when a person is suffering with _____

(a) Knee pains (b) gastric problem (c) Sciatica (d) hernia

Section E: Long Answer Questions (5 marks each)

1. Discuss *Asanas* as a preventive measure for disease.

2. Discuss the Yogic methods to manage obesity in detail.

3. Write down benefits and contraindications of *Tadasana*.

xxxxxxxxxxxxxxxxxxxxxxx

Rajasthani miniature painting

1. Choose select a suitable answer of the statement given below.

(i) Which statement is not correct about the miniature painting 'Raja Aniruddha Singh Hara?

(a) It was painted by Utkal Ram.

    (6) This painting is not related to Bundi sub-school.

(c) Medium of this painting is water colour on paper.

(d) Period of this painting is early 18th century.

(ii) Sahibdin was a courtier painter of Mewar. Name the painting of your course painted by him.

(a) Maru-Ragini

    (c) Chaugan Players

(b) Radha (Bani-Thani)

    (d) Krishna on Swing

(ii) Painting "Bharat Meets Rama at Chitrakuta" was painted by

(a) Dana

(b) Nuruddin

(c) Nihal Chand

(d) Arrogance

(iv) Which painting of your syllabus is related to Bikaner sub-school of Rajasthani school?

(a) Chaugan Players

    (6) Maru-Ragini

    d) Radha (Bani-Thani)

2. Describe the following briefly:

(a) Sub-school of Bikaner painting

(b) Kishangarh Sub-school of painting

(c) Sub-school of Mewar painting

(d) Sub-school of Bundi painting

2. Clarify the specialities of miniature paintings of Jodhpur sub-school of Rajasthani painting.

SHORT TYPE QUESTIONS

3. On the basis of your study, describe the compositional arrangement of the following:

(a) Maru-Ragini

(b) Raja Aniruddha Singh Hara

(c) Radha of Kishangarh (Bani-Thani)

(d) Krishna on Swing

4. On which themes/topics have the artists laid emphasis to make miniature paintings in Rajasthani school?

Pahari miniature painting

Multiple Choice Questions

1. The Pahari School of Miniature Painting originated in which region?

A. Bengal

B. Punjab Hills

C. Rajasthan

D. Gujarat

2. Which ruler is associated with the promotion of the Pahari style in Guler?

A. Raja Ranjit Singh

B. Raja Balwant Singh
C. Raja Man Singh
D. Raja Sansar Chand
3. The famous artist Nainsukh was associated with which Pahari centre?
A. Basohli
B. Chamba
C. Guler
D. Kangra
4. Which theme is most commonly seen in Pahari miniatures?
A. Mughal court scenes
B. Battlefields
C. Krishna-Radha love stories
D. Hunt
ing
scenes
Short
Questio
ns
1. What are the distinguishing features of the Pahari School of painting?
2. Name any two sub-schools under the Pahari School.
3. Mention one famous painting from the Kangra style and its theme.
4. Describe the contribution of Raja Sansar Chand to Pahari art.
5. How does the Pahari style differ from the
Mughal style? Long Questions
1. Describe the main features of the Kangra style of the Pahari School.
        Include details such as composition, color scheme, themes, and emotions portrayed.
2. Write a detailed note on the life and works of artist Nainsukh.
        Mention his artistic style, patrons, and notable contributions to Pahari painting.

Mughal miniature painting

Multiple Choice Questions

1. The Mughal School of painting developed during the reign of which Mughal emperor?
A. Babur
B. Akbar
C. Shah Jahan
D. Aurangzeb
2. Who were the two Persian painters invited by Akbar to develop Mughal painting?
A. Nainsukh and Manaku
B. Bichitr and Daswanth
C. Abd-us-Samad and Mir Sayyid Ali
D. Basawan and Mansoor
3. Which Mughal emperor's period is known for the refinement and elegance in miniature paintings?

A. Akbar
B. Humayun
C. Shah Jahan

D. Jahangir

4. Which theme is least likely to be found in Mughal miniature painting?

A. Portraits

B. Court scenes

C. Religious Hindu themes

D. Hunting scenes

Short Questions

1. Name any two important painters of the Mughal School.

2. Mention two characteristics of Mughal miniature painting.

3. What is the importance of the 'Jahangirnama' in Mughal art?

4. How did Mughal painting influence Rajput painting?

5. LWhat role did Emperor Akbar play in the development of Mughal painting? Long Questions

1. Discuss the features and significance of the painting "Birth of Salim".
Mention its artist, medium, subject matter, and stylistic features.

2. Explain the development of Mughal miniature painting under different emperors.
Include the contribution of Akbar, Jahangir, and Shah Jahan with relevant examples.

Multiple Choice Questions

Deccan miniature painting

1. The Deccan School of miniature painting originated in which region?

A. Punjab

B. Rajasthan

C. South India

D. Central India

2. Which of the following is not a centre of Deccan painting?

A. Bijapur

B. Golconda

C. Hyderabad

D. Jaipur

3. Which of these is a famous painting from the Bijapur School?

A. Hazrat Nizamuddin Auliya and Amir Khusrau

B. Chand Bibi Playing Polo

C. Krishna Lifting Govardhan

D. Jahangir Holding a Picture of the Madonna

4. The Deccan miniature paintings are known for their:

A. Dark tones and religious themes

B. Bold lines and flat colors

C. Rich colors, Persian influence, and luxurious themes

D. Simple lines
and naturalism

Short Questions

1. Name any two major centres of the Deccan School of painting.

2. What are two unique features of Deccan miniature painting?

3. Write a short note on the painting "Chand Bibi Playing Polo".

4. How is the Deccan School different from the Mughal School?

5. Mention the influence of Persian art on the
Deccan School. Long Questions
1. Describe the characteristics of Deccan miniature painting.
   Discuss color usage, themes, human figures, background details, and Persian influence.

2. Write a detailed note on any one centre of the Deccan School (e.g., Bijapur, Golconda, or Hyderabad), highlighting its style and famous works.

DELHI PUBLIC SCHOOL BULANDSHAHR
HOLIDAY HOMEWORK (SESSION: 2025 – 2026)
XII, MUSIC

1. राग भैरव का वादी स्वर क्या है?
   (क) रे (ख) प (ग) ध (घ) म

2. सुबह के समय गाए-बजाए जाने वाले राग?
   (क) खमाज (ख) भैरव (ग) बागेश्री (घ) बिहाग

3. संधिप्रकाश राग किस समय गाए-बजाये जाते है?
   (क) 10 से 4 (ख) 7 से 10 (ग) 4 से 7 (घ) मध्य रात्री

4. रे-ध शुद्ध वाले राग कब गाए जाते है?
   (क) 4 से 7 (ख) 7 से 10 (ग) 10 से 1 (घ) 1 से 4

5. अध्वदर्शक स्वर किसे कहा गया है?
   (क) षडज (ख) धैवत (ग) मध्यम (घ) ऋषभ

6. मौसमी राग कौन से हैं?
   (क) भैरव-भैरवी (ख) तोड़ी-पूवी (ग) मालकौस-बागेश्री (घ) बसंत-बहार

7. राग भैरव में कितने कोमल स्वरो का प्रयोग होता है?
   (क) दो (ख) तीन (ग) चार (घ) एक

8. झपताल में खाली किस मात्रा पर है?
   (क) 7 (ख) 6 (ग) 8 (घ) 9

9. ताल झपताल की कितनी मात्रा होती है?
   (क) आठ (ख) बारह (ग) दस (घ) चौदह

10. रुपक ताल की कितनी मात्रा होती हैं?
    (क) पाच (ख) सात (ग) नौ (घ) ग्यारह

11. रूपक ताल की खाली किस मात्रा पर है?
    (क) तीसरी (ख) पाँचवी (ग) पहली (घ) सातवी

12. ताल रूपक के विभाग किस तरह है?
    (क) 1 2 | 3 4 | 5 6 7 (ख) 1 2 3 | 4 5 6 | 7
    (ग) 1 2 3 | 4 5 | 6 7 (घ) 1 2 | 3 4 | 5 6 7

13. झपताल की विभाग व्यवस्था किस तरह है?
    (क) 1 2 3 | 4 5 | 6 7 8 | 9 10 (ख) 1 2 | 3 4 | 5 6 | 7 8 | 9 10
    (ग) 1 2 | 3 4 5 | 6 7 | 8 9 10 (घ) 1 2 3 | 4 5 6 | 7 8 | 9 10

14. इनमें से किसका शाब्दिक अर्थ आभूषण है?
    (क) तान (ख) खटका (ग) गमक (घ) अलंकार

15. विलंबित लय में स्वरो को गाने की प्रक्रिया क्या कहलाती है?
    (क) तान (ख) आलाप (ग) मुरकी (घ) खटका

16. मींड़ लिखने के लिए उलटा आधेचंद्र कहाँ लगाते है?
    (ख) दाईं ओर (ख) बाईं ओर (ग) ऊपर (घ) नीचे

17. संगीत पारिजात के लेखक कौन है?
    (क) तानसेन जी (ख) अहोबल जी (ग) मतंग जी (घ) भातखण्डे जी

18. संगीत पारिजात कब लिखा गया?
    (ख) 1650 (ख) 1720 (ग) 1750 (घ) 1525

19. संगीत पारिजात के कितने अध्याय है?
    (ख) सात (ख) चार (ग) आठ (घ) पाँच

20. नीचे दो कथन बताए गए हैं सही कथन चुने :-
    कथन (क)- उस्ताद फ़ैयाज़ खान का जन्म 1886 को हुआ।
    कथन (ख)- वह अपनी रचनाओ में अपना नाम प्रेम प्रिय लिखते थे।
    इन कथनों के आलोक में निम्नलिखित विकल्पों में से सही उत्तर चुनें-
    (क) कथन (क) और कथन (ख) दोनों सही है।
    (ख) कथन (क) सही है, परंतु कथन (ख) गलत है।
    (ग) कथन (क) गलत है, परंतु कथन (ख) सही है।
    (घ) कथन (क) और कथन (ख) दोनों गलत है।

21. नीचे दो कथन बताए गए हैं सही कथन चुने:-
    कथन (क)- संगीत पारिजात में सात अध्याय होते है।
    कथन (ख)- संगीत पारिजात में 120 रागो का वर्णन है।
    इन कथनों के आलोक में निम्नलिखित विकल्पों में से सही उत्तर चुनें-
    (क) कथन (क) और कथन (ख) दोनों सही है।
    (ख) कथन (क) सही है, परंतु कथन (ख) गलत है।
    (ग) कथन (क) गलत है, परंतु कथन (ख) सही है।
    (घ) कथन (क) और कथन (ख) दोनों गलत हैं।

22. नीचे दो कथन बदए गए हैं:-
    कथन (क)- स्वरो का विशिष्ट क्रम अलंकार कहलाता है।
    कथन (ख)- अलंकार को हम पलटा भी कहते है।
    इन कथनों के आलोक में निम्नलिखित विकल्पों में से सही उत्तर चुनें-
    (क) कथन (क) और कथन (ख) दोनों सही है।

(ख) कथन (क) सही है, परंतु कथन (ख) गलत है।

(ग) कथन (क) गलत है, परंतु कथन (ख) सही है।

(घ) कथन (क) और कथन (ख) दोनों गलत है।

23. नीचे दो कथन बदए गए हैं:-

कथन (क)- राग भैरव की जाबत सम्पूर्ण सम्पूर्ण है।

कथन (ख)- राग भैरव में रे और ध स्वर वर्जित हैं।

इन कथनों के आलोक में निम्नलिखित विकल्पों में से सही उत्तर चुनें-

(क) कथन (क) और कथन (ख) दोनों सही है।

(ख) कथन (क) सही है, परंतु कथन (ख) गलत है।

(ग) कथन (क) गलत है, परंतु कथन (ख) सही है।

(घ) कथन (क) और कथन (ख) दोनों गलत है।

24. नीचे दो कथन बदए गए हैं:-

कथन (क)- ताल झपताल में दो ताली हैं।

कथन (ख)- ताल झपताल दस मात्रा की ताल है।

इन कथनों के आलोक में निम्नलिखित विकल्पों में से सही उत्तर चुनें-

(क) कथन (क) और कथन (ख) दोनों सही है।

(ख) कथन (क) सही है, परंतु कथन (ख) गलत है।

(ग) कथन (क) गलत है, परंतु कथन (ख) सही है।

(घ) कथन (क) और कथन (ख) दोनों गलत है।

25. ऋतुकालीन राग कौन से होते हैं?

26. राग भैरव का संप्रकृत राग क्या है?

27. अध्वदर्शक स्वर क्या होते है?

28. पूवांगवादी और उतरांगवादी से आप क्या समझते है?

29. ताल झपताल में कौन से गीत गाए जाते है?

30. आलाप से आप क्या समझते है?

31. ताल झपताल को दुगुण में लिखिए।

32. रागो के समय सिद्धांत का संबिप्त वर्णन करें।

33. राग भैरव का परिचय लिखिए।

34. उस्ताद फ़ैयाज़ खाँ की मृत्यु कब हुई थी?

35. संगीत पारिजात में कितने श्लोक होते है?

36. मीड़ं को परिभाषित करें।

37. उस्ताद फ़ैयाज़ खाँ का जीवन परिचय बलखें ।

38. संगीत पारिजात का संक्षिप्त वर्णन करें।

SECTION –A   (1x20=20)

1. How many Taali in Jhap Taal-
   a)   2   b) 3   c) 5

2. How many khali in Jhap Taal-
   a) 2   b) 1   c) 3

3. How many Chaand in Jhap Taal-

   a) 2/2   b) 2/3   c) 3/2

4. Write the 5th bol of Jhap Taal-

   a) Na   b) Dhi   c) Ti

5. Write the 2nd bol of Jhap Taal -
   a) Dha   b) Na   c) Dhi

6. How many beats in Teen Taal?
   a) 15   b) 12   c) 16

7. How many Taali in Teen Taal-
   a) 2   b) 1   c) 3

8. How many khali in Teen Taal-
   a) 1   b) 2   c) 3

9. How many Chaand in Teen Taal-

   a) 3/2   b) 4/4   c) 4/6

10. Write the 9th bol of Teen Taal-

    a) Dha   b) Na   c) Tin

11. How many non -composite Mudras are in Dance?

    a) 28   b)26   c)23

12. How many composite Mudras are in Dance?

    a)25   b)23   c)24

13. Which mudra denote a crocodile(Makara)?

    a) Swastika   b)Utsanga   c) Pushpaputa

14. Which hand mudra used to denote holding of objects or attack?

   a)Mayur   b) Mushti   c)Aral

15. Name this hasta mudra.

   a) Mushti   b)Shikhar   c)Aral

16. Name this hasta mudra.

   a) Suchimukh   b)Shukatund   c) Tripataka

17. Which mudra used to show the beginning of the dance?

   a)Pushpaput   b)Shivalinga   c)Dolahast

18. Which mudra used to show a pig?

   a)Khatwa   b) Varaha   c) Bherund

19. Which mudra is used to express Goddess Saraswati?

   A) Mukul   b) Kapith   c) Padmakosh

20. Which mudra shows anxiety or bow?

   a) Shikhara   b)Mushti   c)Ardhachandra

SECTION- B

(02x05=10)

   21. Who was the founder of Jaipur gharana?

   22. Name the brothers of Janki Prasad,write their names.

   23. Who was the father of Laluji?

   24. Who was Chiranjilal?

   25. Name the sons of Narayan Prasad.

SECTION-C   (02x05=10)

   26. Who was Bindadin Maharaj?
   27. Who was Lacchu Maharaj?

28. Who was Birju Maharaj?
29. Who was appointed as Guru to whom?
30. Who was Gopi Krishna?

SECTION –D   (02x04=08)
31. What is Thumri?
32. What is Tatkar?
33. What is Sam and Aamad?
34. Explain Teen Taal and Jhaap taal with 1 to 4 guna.

SECTION-E   (06x02=12)
35. Explain three Gharanas of Kathak dance.
36. Write a brief note about the Kathak Dance.

Chapter : – Matrices

Multiple choice questions

1. If a matrix has 6 elements, then number of possible orders of the matrix can be
   (a) 2   (b) 4   (c) 3   (d) 6

2. If A and B are square matrices of the same order, then $(A + B)(A – B)$ is equal to
   (a) $A^2 – B^2$ (b) $A^2 – BA – AB – B^2$ (c) $A^2 – B^2 + BA – AB$ (d) $A^2 – BA + B^2 + AB$

3. Total number of possible matrices of order 2×3 with each entry 1 or 0 is
   (a) 6   (b) 36   (c) 32   (d) 64

4. If A is a square matrix such that $A^2 = A$, then $(I + A)^2 – 3A$ is
   (a) I   (b) 2A   (c) 3I   (d) A

5. If a matrix A is both symmetric and skew symmetric then matrix A is
   (a) a scalar matrix (b) a diagonal matrix (c) a zero matrix of order $n \times n$ (d) none of these.

6. Total number of possible matrices of order 3×3 with each entry 2 or 0 is
   (a) 9   (b) 27   (c) 81   (d) 512

7. If A and B are two matrices of the order $3 \times m$ and $3 \times n$, respectively, and $m = n$, then the order of matrix $(5A – 2B)$ is
   (a) $m \times 3$ (b) 3×3 (c) $m \times n$ (d) $3 \times n$

8. If A is matrix of order $m \times n$ and B is a matrix such that AB' and $B'A$ are both defined, then order of matrix B is
   (a) $m \times m$ (b) $n \times n$ (c) $n \times m$ (d) $m \times n$

9. If A and B are matrices of same order, then $(AB'–BA')$ is a
   (a) skew symmetric matrix (b) null matrix   (c) symmetric matrix   (d) unit matrix

10. For any two matrices A and B, we have
    (a) $AB = BA$ (b) $AB \neq BA$ (c) $AB = O$ (d) None of the above

11. A matrix has 18 elements, then possible number of orders of a matrix are

    (a) 3   (b) 4   (c) 6   (d) none of these

12. If a matrix A is both symmetric and skew symmetric then matrix A is

    (a) a scalar matrix   (b) a diagonal matrix

    (c) a zero matrix of order $n \times n$ (d) a rectangular matrix.

13. If A and B are two matrices such that their multiplication is defined, then $(AB)'$

    (a) $A'B'$ (b) AB (c) AB' (d) $B'A'$

14. If matrices A and B are inverse of each other then

(a) AB = BA   (b) AB = BA = I   (c) AB = BA = O   (d) AB = O, BA = I

15. If A and B are matrices of order $3 \times m$ and $3 \times n$ respectively such that m = n, then order of 2A + 7B is

(a) 3×3 (b) $m \times 3$ (c) $n \times 3$ (d) $3 \times m$

16.. If A is a square matrix such that $A^2 = A$, then $(I + A)^2 - 3A$ is
(a) I (b) $2A$ (c) $3I$ (d) A

17. If A and B are symmetric matrices, then $AB - BA$ is

(a) symmetric matrix   (b) skew symmetric matrix   (c) null matrix   (d) Identity matrix

18. If a matrix A is both symmetric and skew symmetric then matrix A is
(a) a scalar matrix   (b) a diagonal matrix
(c) a zero matrix of order $n \times n$ (d) a rectangular matrix.

Short answer type question

19. If a matrix has 5 elements, write all possible orders it can have ?

20. If matrix A = [1 2 3] then find AA', where A' is the transpose of matrix A.

21. If a matrix has 28 elements, what are the possible orders it can have? What if it has 13 elements?

22. Write a 3×3 skew symmetric matrix.

23. If A and B are symmetric matrices, show that AB is symmetric, if $AB = BA$.

24. If A and B are two matrices such that $AB = B$ and $BA = A$ then write $A^2 + B^2$ in terms of A and B

25. Show that all the elements on the main diagonal of a skew symmetric matrix are zero.

26. For the matrix A, show that $A + A^T$ is a symmetric matrix.

27. Show that the matrix $B'AB$ is symmetric or skew symmetric according as A is symmetric or skew symmetric.

28. There are 2 families A and B. There are 4 men, 6 women and 2 children in family A, and 2

men, 2 women and 4 children in family B. The recommended daily amount of calories is 2400 for men, 1900 for women, 1800 for children and 45 grams of proteins for men, 55 grams for women and 33 grams for children. Represent the above information using matrices. Using matrix multiplication, calculate the total requirement of calories and proteins for each of the 2 familes.

29. If $\begin{bmatrix} x-y & 2x+z \\ 2x-y & 3z+w \end{bmatrix} = \begin{bmatrix} -1 & 5 \\ 0 & 13 \end{bmatrix}$, find x,y,z,w.   C.B.S.E (2002,2013)

30. Construct a 2 x 2 matrix A = [a_{ij}] whose elements a_{ij} are given by

$a_{ij} = \dfrac{(i-2j)^2}{2}$ C.B.S.E (2002)

31. Construct a 2 x 2 matrix A = [a_{ij}] whose elements a_{ij} are given by

$a_{ij} = \dfrac{(2i+j)^2}{2}$ C.B.S.E (2002).

32. If $A = \begin{bmatrix} 3 & 1 \\ -1 & 2 \end{bmatrix}$, show that $A^2 - 5A + 7I = 0$ C.B.S.E (2003,2007)

33. If $A = \begin{bmatrix} 2 & -3 & -5 \\ -1 & 4 & 5 \\ 1 & -3 & -4 \end{bmatrix}$, show that $A^2 = A$

34. Find the matrix A, such that $\begin{bmatrix} 2 & -1 \\ 1 & 0 \\ -3 & 4 \end{bmatrix} A = \begin{bmatrix} -1 & -8 & -10 \\ 1 & -2 & -5 \\ 9 & 22 & 15 \end{bmatrix}$.

35. If $A^T = \begin{bmatrix} 3 & 4 \\ -1 & 2 \\ 0 & 1 \end{bmatrix}$ and $B = \begin{bmatrix} -1 & 2 & 1 \\ 1 & 2 & 3 \end{bmatrix}$, find $A^T - B^T$.   C.B.S.E (2012)

36. Express the matrix $\begin{bmatrix} 3 & -2 & -4 \\ 3 & -2 & -5 \\ -1 & 1 & 2 \end{bmatrix}$ as the sum of symmetric and skew-symmetric matrix

and verify the result.   C.B.S.E (2010)

37. Find the value of x from the matrix $\begin{bmatrix} 2x-y & 5 \\ 3 & y \end{bmatrix} = \begin{bmatrix} 6 & 5 \\ 3 & -2 \end{bmatrix}$.   C.B.S.E (2009)

38. If $\begin{bmatrix} 2x+y & 3y \\ 0 & 4 \end{bmatrix} = \begin{bmatrix} 6 & 0 \\ 6 & 4 \end{bmatrix}$, find x .   C.B.S.E (2010)

39. If $2\begin{bmatrix} 3 & 4 \\ 5 & x \end{bmatrix} + \begin{bmatrix} 1 & y \\ 0 & 1 \end{bmatrix} = \begin{bmatrix} 7 & 0 \\ 10 & 5 \end{bmatrix}$, find x – y. C.B.S.E (2014)

40. If $\begin{bmatrix} xy & 4 \\ z+6 & x+y \end{bmatrix} = \begin{bmatrix} 8 & w \\ 0 & 6 \end{bmatrix}$, write the value of x+y+z. C.B.S.E (2014)

41. For what value of x , the matrix $A = \begin{bmatrix} 0 & 1 & -2 \\ -1 & 0 & 3 \\ x & -3 & 0 \end{bmatrix}$ is a skew- symmetric matrix? C.B.S.E (2013)

2. If $A = \begin{bmatrix} 1 & 0 & 2 \\ 0 & 2 & 1 \\ 2 & 0 & 3 \end{bmatrix}$, prove that $A^3 - 6A^2 + 7A + 2I = 0$.

43. If $A = \begin{bmatrix} 0 & -tan\frac{\alpha}{2} \\ tan\frac{\alpha}{2} & 0 \end{bmatrix}$ and I is the identity matrix of order 2, then show that :

$$I + A = (I - A)\begin{bmatrix} \cos\alpha & -\sin\alpha \\ \sin\alpha & \cos\alpha \end{bmatrix}$$

44. If $F(x) = \begin{bmatrix} \cos x & -\sin x & 0 \\ \sin x & \cos x & 0 \\ 0 & 0 & 1 \end{bmatrix}$, then show that $F(x).F(y) = F(x+y)$

45. Show that the matrix $B^T AB$ is symmetric or skew- symmetric according as A is

   Symmetric or skew- symmetric.

46. If $A = \begin{bmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \\ 1 & 1 & 1 \end{bmatrix}$, then prove that $A^n = \begin{bmatrix} 3^{n-1} & 3^{n-1} & 3^{n-1} \\ 3^{n-1} & 3^{n-1} & 3^{n-1} \\ 3^{n-1} & 3^{n-1} & 3^{n-1} \end{bmatrix}, n \in N.$

47. If $A = \begin{bmatrix} 2 & -1 \\ -1 & 2 \end{bmatrix}$ and I is the identity matrix of order 2, then show that $A^2 = 4A - 3I$. Hence find A^{-1}

48. Let $A = \begin{bmatrix} 2 & 3 \\ -1 & 2 \end{bmatrix}$ then show that $A^2 - 4A + 7I = 0$. Using this result calculate A^5.

49. Prove that every matrix can be uniquely expressed as the sum of a symmetric and skew- symmetric matrix.

50. Given matrix $A = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$, find $f(A)$, if $f(x) = 2x^2 - 3x + 5$.

51. For the following matrices A and B, verify that $(AB)' = B'A'$. $A = \begin{bmatrix} 1 \\ -4 \\ 3 \end{bmatrix}$ and $B = \begin{bmatrix} -1 & 2 & 1 \end{bmatrix}$.

52. If $A = \begin{bmatrix} 1 & -1 \\ 2 & -1 \end{bmatrix}$ and $B = \begin{bmatrix} a & 1 \\ b & -1 \end{bmatrix}$ and $(A+B)^2 = A^2 + B^2$, then find the values of a and b.

53. Let $A = \begin{bmatrix} 2 & -1 \\ 3 & 4 \end{bmatrix}, B = \begin{bmatrix} 5 & 2 \\ 7 & 4 \end{bmatrix}$ and $C = \begin{bmatrix} 2 & 5 \\ 3 & 8 \end{bmatrix}$. Find a matrix D such that $CD - AB = 0$.

54. For the matrix $A = \begin{bmatrix} 3 & 1 \\ -1 & 2 \end{bmatrix}$ and $I = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$, find k so that $A^2 = 5A + kI$

55. If $A = \begin{bmatrix} \cos x & -\sin x \\ \sin x & \cos x \end{bmatrix}$, find AA'.

56. If $A = \begin{bmatrix} \alpha & \beta \\ \gamma & -\alpha \end{bmatrix}$ is such that $A^2 = I$, then find the value of $1 - \alpha^2 - \beta\gamma$

57. Find the matrix A satisfying the matrix equation $\begin{bmatrix} 2 & 1 \\ 3 & 2 \end{bmatrix} A \begin{bmatrix} -3 & 2 \\ 5 & -3 \end{bmatrix} = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$

58. If $A = \begin{bmatrix} 2 & -1 \\ -1 & 2 \end{bmatrix}$ and I is the identity matrix of order 2, then show that $A^2 = 4A - 3I$. Hence find A^{-1}

59. Let $A = \begin{bmatrix} 2 & 3 \\ 1 & 1 \end{bmatrix}$ then show that $A^2 - 3A - I = 0$. Using this result calculate A^4.

60. If $f(\alpha) = \begin{bmatrix} \cos\alpha & -\sin\alpha & 0 \\ \sin\alpha & \cos\alpha & 0 \\ 0 & 0 & 1 \end{bmatrix}$, prove that $f(\alpha).f(-\beta) = f(\alpha - \beta)$.

Chapter : — Determinants

Multiple choice questions

1. Value of $\begin{vmatrix} x+1 & x-1 \\ x^2+x+1 & x^2-x+1 \end{vmatrix}$ is equal to
   [C.B.S.E 2024]
   (a) $2x^3$ (b) 2   (c) 0   (d) $2x^3 - 2$]

2. Value of $\begin{vmatrix} 8 & 2 & 7 \\ 12 & 3 & 5 \\ 16 & 4 & 3 \end{vmatrix}$ is:
   [C.B.S.E 2024]
   (a) 0   (b) 2   (c) 7   (d) -2

3. If $\begin{vmatrix} 1 & 3 & 1 \\ k & 0 & 1 \\ 0 & 0 & 1 \end{vmatrix} = \pm 6$, then the value of k is
   [C.B.S.E 2024]
   (a) 2   (b) -2 (c) ± 2 (d) ∓ 2

4. If $\begin{vmatrix} 2 & 3 & 2 \\ x & x & x \\ 4 & 9 & 1 \end{vmatrix} + 3 = 0$, then the value of x is:
   [C.B.S.E 2020]
   (a) 3   (b) 0   (c) -1 (d) 1

5. Let $A = \begin{bmatrix} 200 & 50 \\ 10 & 2 \end{bmatrix}$ & $B = \begin{bmatrix} 50 & 40 \\ 2 & 3 \end{bmatrix}$, then $|AB|$ is equal to
   [C.B.S.E 2020]
   (a) 460   (b) 2000   (c) 3000   (d) -7000
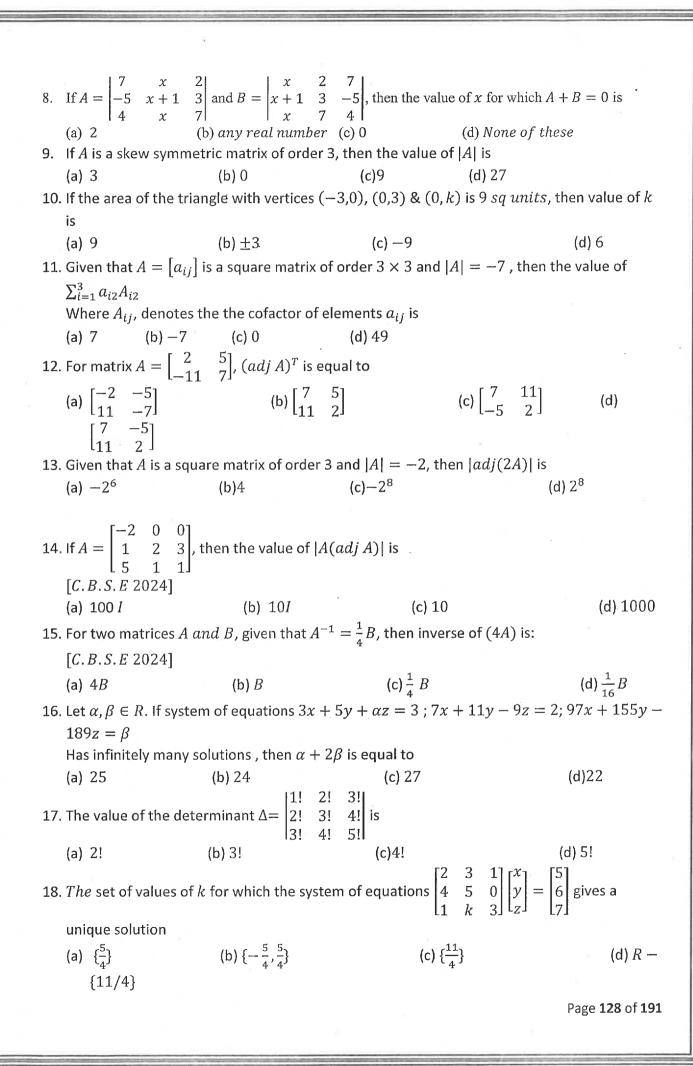
6. If A is a square matrix of order 2 & $|A| = -2$, then value of $|5A^T|$ is
   [C.B.S.E 2024]
   (a) -50 (b) -10 (c) 10   (d) 50

7. If A is an invertible matrix , then $\det A^{-1}$ is equal to
   (a) $\det(A)$ (b) $\frac{1}{\det(A)}$ (c) 1   (d) *None of these*

8. If $A = \begin{vmatrix} 7 & x & 2 \\ -5 & x+1 & 3 \\ 4 & x & 7 \end{vmatrix}$ and $B = \begin{vmatrix} x & 2 & 7 \\ x+1 & 3 & -5 \\ x & 7 & 4 \end{vmatrix}$, then the value of x for which $A + B = 0$ is

   (a) 2   (b) *any real number*   (c) 0   (d) *None of these*

9. If A is a skew symmetric matrix of order 3, then the value of $|A|$ is

   (a) 3   (b) 0   (c)9   (d) 27

10. If the area of the triangle with vertices $(-3,0)$, $(0,3)$ & $(0,k)$ is $9 \; sq \; units$, then value of k is

    (a) 9   (b) ± 3 (c) -9 (d) 6

11. Given that $A = [a_{ij}]$ is a square matrix of order 3×3 and $|A| = -7$, then the value of $\sum_{i=1}^{3} a_{i2} A_{i2}$

    Where A_{ij}, denotes the the cofactor of elements a_{ij} is

    (a) 7   (b) -7 (c) 0   (d) 49

12. For matrix $A = \begin{bmatrix} 2 & 5 \\ -11 & 7 \end{bmatrix}$, $(adj \; A)^T$ is equal to

    (a) $\begin{bmatrix} -2 & -5 \\ 11 & -7 \end{bmatrix}$ (b) $\begin{bmatrix} 7 & 5 \\ 11 & 2 \end{bmatrix}$ (c) $\begin{bmatrix} 7 & 11 \\ -5 & 2 \end{bmatrix}$ (d)

    $\begin{bmatrix} 7 & -5 \\ 11 & 2 \end{bmatrix}$

13. Given that A is a square matrix of order 3 and $|A| = -2$, then $|adj(2A)|$ is

    (a) -2^6 (b)4   (c)-2^8 (d) 2^8

14. If $A = \begin{bmatrix} -2 & 0 & 0 \\ 1 & 2 & 3 \\ 5 & 1 & 1 \end{bmatrix}$, then the value of $|A(adj \; A)|$ is

    [C.B.S.E 2024]

    (a) $100 \; I$ (b) $10I$ (c) 10   (d) 1000

15. For two matrices A and B, given that $A^{-1} = \frac{1}{4}B$, then inverse of $(4A)$ is:

    [C.B.S.E 2024]

    (a) $4B$ (b) B (c)$\frac{1}{4} B$ (d)$\frac{1}{16}B$

16. Let $\alpha, \beta \in R$. If system of equations $3x + 5y + \alpha z = 3$; $7x + 11y - 9z = 2$; $97x + 155y - 189z = \beta$

    Has infinitely many solutions , then $\alpha + 2\beta$ is equal to

    (a) 25   (b) 24   (c) 27   (d)22

17. The value of the determinant $\Delta = \begin{vmatrix} 1! & 2! & 3! \\ 2! & 3! & 4! \\ 3! & 4! & 5! \end{vmatrix}$ is

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

18. *The* set of values of k for which the system of equations $\begin{bmatrix} 2 & 3 & 1 \\ 4 & 5 & 0 \\ 1 & k & 3 \end{bmatrix} \begin{bmatrix} x \\ y \\ z \end{bmatrix} = \begin{bmatrix} 5 \\ 6 \\ 7 \end{bmatrix}$ gives a

    unique solution

    (a) $\{\frac{5}{4}\}$ (b) $\{-\frac{5}{4}, \frac{5}{4}\}$ (c) $\{\frac{11}{4}\}$ (d) $R -$

    $\{11/4\}$

19. If A be a 3×3 square matrix such that $A(adj\ A) = \begin{bmatrix} 5 & 0 & 0 \\ 0 & 5 & 0 \\ 0 & 0 & 5 \end{bmatrix}$, then the value of $|adj\ A|$ is

(a) 5   (b) 25   (c)125   (d)625

20. If $\begin{vmatrix} 2 & 4 \\ 5 & 1 \end{vmatrix} = \begin{vmatrix} 2x & 4 \\ 6 & x \end{vmatrix}$,then the possible values of x is /are

(a) 3   (b) $\sqrt{3}$ (c) $-\sqrt{3}$

    (d) $-\sqrt{3}, \sqrt{3}$

21. If A and B are two non-singular matrices of order n then $|kAB|$ is

(a) $k^{2n}|A||B|$ (b) $k^{n^2}|A||B|$ (c) $k^n|A||B|$ (d) $k|A||B|$

22. If $A(adj\ A) = \begin{bmatrix} -3 & 0 & 0 \\ 0 & -3 & 0 \\ 0 & 0 & -3 \end{bmatrix}$, then $|A|$ is equal to

(a) 9   (b) -3 (c) -6 (d) 3

23.

ASSERTION – REASON

24. **Assertion-** If $A = \begin{bmatrix} 2 & 1 & -1 \\ 0 & 3 & 2 \\ 0 & 0 & -4 \end{bmatrix}$,then $|A| = -24$

    Reason- Then determinant of upper triangular matrix is equal to product of its diagonals elements.

25. **Assertion-** If $A = \begin{vmatrix} 1 & 0 & 1 \\ 0 & 1 & 2 \\ 0 & 0 & 4 \end{vmatrix}$, then $|3A| = 27|A|$

    Reason- If A is a square matrix of order n, then $|kA| = k^n|A|$.

26. **Assertion-** If A is a skew-symmetric matrix of odd order, then $|A| = 0$.

    Reason- For a square matrix A, $|A| = |A^T|$

27. **Assertion-** $A\ (adj\ A) = |A|I_2$

    Reason- $adj\ (AB) = (adj\ A)(adj\ B)$

28. **Assertion -** The determinant of matrix $A = \begin{bmatrix} 0 & 1 & 2 \\ -1 & 0 & 3 \\ -2 & -3 & 0 \end{bmatrix}$ is zero

    Reason – *The* determinant of every skew-symmetric matrix of odd order is zero.

29. **Assertion –** Suppose

$A, B \& C$ *are square matrices of same order such that AB is invertible*

         If $AB = AC$, then $B = C$

    Reason - *A is* invertible,

30. **Assertion -** $adj(adj\ A) = |A|^{n-2}A$

    Reason - $|adj\ A| = |A|^{n-1}$

31. **Assertion –** If A is a diagonal matrix, then $\det A = 0$

    Reason - If A is a skew- symmetric matrix of odd order, then $\det(A)=0$.

32. **Assertion -** The value of x satisfying $\begin{vmatrix} x & 2 \\ 18 & x \end{vmatrix} = \begin{vmatrix} 6 & 2 \\ 18 & 6 \end{vmatrix}$ are ± 6.

   Reason - If $A = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$, then $|A| = ad - bc$

33. **Assertion –** The determinant of matrix $A = \begin{bmatrix} 0 & 1 & 2 \\ -1 & 0 & 3 \\ -2 & -3 & 0 \end{bmatrix}$ is zero

   Reason - The determinant of every skew- symmetric matrix of odd order is zero.

Short answer type Quesions

34. If $A = \begin{bmatrix} 1 & 2 \\ 4 & 2 \end{bmatrix}$, then show that $|2A| = 4|A|$.

35. Show that the points $A(a, b+c), B(b, c+a)$, and $C(c, a+b)$ are collinear.

36. If $\begin{bmatrix} 1 & 0 & 1 \\ 0 & 1 & 2 \\ 0 & 0 & 4 \end{bmatrix}$, then show that $|3A| = 27|A|$.

37. Find the value of x if $\begin{vmatrix} 2 & 4 \\ 5 & 1 \end{vmatrix} = \begin{vmatrix} 2x & 4 \\ 6 & x \end{vmatrix}$.

38. Let $A = \begin{bmatrix} 3 & 7 \\ 2 & 5 \end{bmatrix}$ and $B = \begin{bmatrix} 6 & 8 \\ 7 & 9 \end{bmatrix}$, verify that $(AB)^{-1} = B^{-1}A^{-1}$.

39. If $\begin{vmatrix} x & 2 \\ 18 & x \end{vmatrix} = \begin{vmatrix} 6 & 2 \\ 18 & 6 \end{vmatrix}$, then x is equal to _____ ?

40. Find the inverse of the matrix $\begin{bmatrix} -3 & 2 \\ 5 & -3 \end{bmatrix}$. Hence , find the matrix P satisfying the matrix equation

   $P \begin{bmatrix} -3 & 2 \\ 5 & -3 \end{bmatrix} = \begin{bmatrix} 1 & 2 \\ 2 & -1 \end{bmatrix}$

41. If $A = \begin{bmatrix} -1 & a & 2 \\ 1 & 2 & x \\ 3 & 1 & 1 \end{bmatrix}$ & $\begin{bmatrix} 1 & -1 & 1 \\ -8 & 7 & -5 \\ b & y & 3 \end{bmatrix}$, find the value of $(a+x) - (b+y)$

42. Verify that $(AB)^{-1} = B^{-1}A^{-1}$ for matrices $A = \begin{bmatrix} 2 & 3 \\ 1 & -4 \end{bmatrix}$ & $B = \begin{bmatrix} 1 & -2 \\ -1 & 3 \end{bmatrix}$

43. If A & B are invertible matrices of same order such that

   $(AB)^{-1} = \frac{1}{48} \begin{bmatrix} 0 & 0 & 16 \\ 0 & 24 & 0 \\ 3 & 0 & 0 \end{bmatrix}$ & $A = \begin{bmatrix} -2 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 3 \end{bmatrix}$

Long Answer type question

44. If $A = \begin{bmatrix} 1 & 2 & -2 \\ -1 & 3 & 0 \\ 0 & -2 & 1 \end{bmatrix}$ & $B = \begin{bmatrix} 3 & -1 & 1 \\ -15 & 6 & -5 \\ 0 & -2 & 2 \end{bmatrix}$, find $(AB)^{-1}$

45. If $A = \begin{bmatrix} \cos\alpha & \sin\alpha & 0 \\ \sin\alpha & \cos\alpha & 0 \\ 0 & 0 & 1 \end{bmatrix}$, then find $adj\,A$ & verify $A(adj\,A) = (adj\,A)\,A = |A|I_3$

46. Use product $\begin{bmatrix} 1 & -1 & 2 \\ 0 & 2 & -3 \\ 3 & -2 & 4 \end{bmatrix} \begin{bmatrix} -2 & 0 & 1 \\ 9 & 2 & -3 \\ 6 & 1 & -2 \end{bmatrix}$ to solve the system of equations:

   $x - y + 2z = 1$; $2y - 3z = 1$; $3x - 2y + 4z = 2$

47. Using matrices , solve the following system of equations:

   $4x + 3y + 2z = 60$; $x + 2y + 3z = 45$; $6x + 2y + 3z = 70$.

48. Determine the product $\begin{bmatrix} -4 & 4 & 4 \\ -7 & 1 & 3 \\ 5 & -3 & -1 \end{bmatrix}\begin{bmatrix} 1 & -1 & 1 \\ 1 & -2 & -2 \\ 2 & 1 & 3 \end{bmatrix}$ and use it to solve the system of equations

$$x - y + z = 4; \quad x - 2y - 2z = 9 \quad ; \quad 2x + y + 3z = 1.$$

49. If $A = \begin{bmatrix} -3 & -2 & -4 \\ 2 & 1 & 2 \\ 2 & 1 & 3 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & 2 & 0 \\ -2 & -1 & -2 \\ 0 & -1 & 1 \end{bmatrix}$, then find AB and use it to solve the following system of

equation :

$$x - 2y = 3 \quad ; 2x - y - z = 2 \quad ; \quad -2y + z = 3.$$

50. Solve the following system of equations using matrix method

$$\frac{2}{x} + \frac{3}{y} + \frac{10}{z} = 4 \; ; \; \frac{4}{x} - \frac{6}{y} + \frac{5}{z} = 1 \; ; \; \frac{6}{x} + \frac{9}{y} - \frac{20}{z} = 2$$

Case Study based questions

51. A manufacturer produced three stationary products Pencil, Eraser and Sharpeners which he sells in two markets A & B. Annual sales are indicated below:

Market	Products (in numbers)		
	Pencil	Eraser	Sharpener
A	10,000	2,000	18,000
B	6,000	20,000	8,000

If the unit price of Pencil, Eraser and Sharpner are Rs 2.50 , Rs 1.50 and Rs 1.00 respectively and unit cost of the above three commodities are Rs 2.00 , Rs 1.00 and Rs 0.50 respectively, then by using matrix method.

(i)   Find total revenue of market A.
(ii)   Find total revenue of market B.
(iii)   Find total profit in market A and market B.

52. Amit, Bina & Chirag were given the task of creating a square matrix of order 2. Below are the matrices created by them . $A = \begin{bmatrix} 1 & 2 \\ -1 & 3 \end{bmatrix}, B = \begin{bmatrix} 4 & 0 \\ 1 & 5 \end{bmatrix}$ & $C = \begin{bmatrix} 2 & 0 \\ 1 & -2 \end{bmatrix}$.

On the basis of the above information, answer the following questions:

(a) Find the value of $|A + (B + C)|$ (1)
(b) Evaluate $|(A^T)^T|$ (1)
(c) Find the matrix $(a + b)|B|$ when $a = 4$ & $b = -2$.   (2)

53. Raman wants to donate a rectangle plot of land for a school in her village. When she was asked to give dimensions of the plot, she told that if its length is decreased by 50 m and breath is increased by 50 m , then its area does not alter , but if length is decreased by 10 m and breath is decreased by 20 m , then its area will decreased by 5300 m^2

(a) If the length & breath of the rectangular plot are x m and y m respectively , then find the system of linear equations in x , y.

(b) Write the matrix equation representing the system of equations obtained in (i).

(c) What is the length of the rectangular plot. (solve by matrix method).

54. Shopkeeper. His friends, Daya and Anil purchases 2 pens, 1 pencil, 2 instrument boxes and 2 pens, 2 pencils and 2 mathematical instrument boxes respectively. Daya and Anil pays ₹ 29 and ₹ 44 respectively.

Based on the above information answer the following

(a)   The cost of one pen is

     (i)   ₹ 2   (ii)   ₹ 5 (iii) ₹ 10 (iv)   ₹ 15

(b)   The cost of one pen and one pencil is

     (i)   ₹ 5   (ii)   ₹ 10 (iii)   ₹ 15 (iv)   ₹ 17

(c)   The cost of one pen and one mathematical instrument box is

     (i)   ₹ 7   (ii)   ₹ 10 (iii)   ₹ 15 (iv)   ₹ 18

(d)   The cost of one pencil and one mathematical instrumental box is

     (i) ₹ 5 (ii)   ₹ 10 (iii)   ₹ 15 (iv)   ₹ 20

56. Three vegetable shopkeepers A, B and C are using polythene bags. Handmade bags which are

prepared by old age home workers and newspapers' envelope as carry bags. It is found that A,

B and C are using (20, 30, 40), (30, 40, 20) and (40, 20, 30) polythene bags, handmade bags, and newspaper envelopes respectively. The shopkeepers A, B, and C spent ₹ 250, ₹ 270 and ₹ 200 on these bags respectively.

Based on the above information answer the following:

(a)   What is the cost of one handmade bag?

(b)   What is the cost of one polythene bag?

(c)   What is the cost of one newspaper bag?

OR

Which vegetable shopkeeper is better, based on the social condition?

Chapter : − Relation & Function

Multiple choice questions − 1 mark each

55. A relation R defined on a set of human being as $R = \{(x, y) : x \text{ is 5 cm shorter than } y\}$ is

(b) Reflexive only   (c) Symmetric and transitive

(c) Reflexive and transitive   (d) None of above

56. Let R be a relation on the set Z of integers given by $aRb \ iff \ a = 3^k b$ for some integer k. Then R

(a) Symmetric but not transitive   (c) Not symmetric but transitive

(b) Neither symmetric nor transitive   (d) Equivalence relation

57. S is a relation over the set of R of all real numbers and it is given by $(a, b) \in S \ iff \ ab \geq 0$. Then S

(a) Symmetric & transitive   (c) Reflexive and Symmetric

(b) Reflexive and transitive   (d) Equivalence relation

58. Let set $X = \{1,2,3\}$ and a relation R on X defined as $R = \{(1,3)\ (2,2)\ (3,2)\}$, then minimum ordered pairs which should be added in relation R to make it reflexive and symmetric are:
    (a) $\{(1,1)\ (2,3)\ (1,2)\}$ (c) $\{(3,3)\ (3,1)\ (1,2)\}$
    (b) $\{(1,1)\ (3,3)\ (3,1)(2,3)\}$ (d) $\{(1,1)\ (3,3)\ (3,1)(1,2)\}$

59. Let $A = \{1,2,3\}$, Then, the number of relations containing $(1,2)$ & $(1,3)$ which are reflexive and symmetric but not transitive is:
    (b) 1   (b) 2   (c) 3   (d) 4

60. The number of possible reflexive relations on a set of 3 elements is:
    (b) 512   (b) 64   (c) 256   (d) 128

61. Let $f(x) = \log(1-x) + \sqrt{x^2 - 1}$. Then, the domain of f is
    (a) $(1, \infty)$ (b) $(-\infty, -1]$ (c) $[-1,1)$ (d) $(0,1)$

62. If f is a real function defined by $f(x) = \frac{\log(2x+1)}{\sqrt{3-x}}$, then the domain of the function is
    (a) $\left(-\frac{1}{2}, \infty\right)$ (b) $(-\infty, 3)$ (c) $\left(-\frac{1}{2}, 3\right]$ (d) $\left(-\frac{1}{2}, 3\right)$

63. If a function $f : [2, \infty) \to R$ is defined by $f(x) = x^2 - 4x + 5$, then the range of f is:
    (b) R (b) $[1, \infty)$ (c) $[4, \infty)$ (d) $[5, \infty)$

64. If $g = \{(1,1)\ (2,3)\ (3,5)\ (4,7)\}$ is described as $g(x) = \alpha x + \beta$, then $(\alpha, \beta) =$
    (b) $(2,1)$ (b) $(2,-1)$ (c) $(-2,1)$ (d) $(-2,-1)$

65. If $A = \{a, b, c\}$ and $B = \{-3, -1, 0, 1, 3\}$, then the number of injection that can be defined from A to B
    (b) 125   (b) 243   (c) 60   (d) 120

66. If $A = \{0,1,2,3,4\}$ and $B = \{a, b\}$, then the number of onto functions from A to B is :
    (b) 20   (b)31   (c)30   (d)None of these

67. A function $f: R \to A$ defined as $f(x) = x^2 + 1$ is onto, if A is
    (b) $(-\infty, \infty)$ (b)$(1, \infty)$ (c)$[1, \infty)$ (d)$[-1, \infty)$

68. Which of the following statements are correct ?
    (b) A greatest integer function is one-one in R.   (c) A constant function is onto in R.

    (c) A signum function is into in R.   (d) A cubic function is not bijective in R.

69. Let Z denote the set of integers, then function$f: Z \to Z$ defined as $f(x) = x^3 - 1$ is :
    (b) Both one –one and onto   (c) One-one but not onto
    (c) Onto but not one-one   (d) Neither one –one nor onto

70. If $f(x) = \cos[\pi^2]x + \cos[-\pi^2]x$; $[.]$ denotes a greatest integer function ,then which of the following are correct.
    (b) $f(0) = 0$ (b)$f\left(\frac{\pi}{2}\right) = -1$ (c) $f(\pi) = 0$
    (d)$f(-x) = 2$

71. Let $f(x) = \sqrt{\log(2x - x^2)}$. Then, domain of f is :

(b) (0,2)   (b)[1,2]   (c)(−∞, 1]   (d) None
of these

72. The domain of $f(x) = \frac{\log_{(x+1)}(x-2)}{e^{2\log x} - (2x+3)}$ is:

(b) R −{3}   (b) $(2, \infty) − \{3\}$ (c))$(−1, \infty) − \{3\}$ (d)R−{−1,3}

73. $f(x) = \frac{2^{2x}}{2^{2x}+2}, x \in R$, then $f\left(\frac{1}{2023}\right) + f\left(\frac{2}{2023}\right) + \cdots + \left(\frac{2022}{2023}\right)$ is equal to:

(a) 2010   (b)2011   (c)1011   (d)1010

74. The range of the function $f(x) = \frac{1}{3 - \sin 4x}$ is :

(a)$[\frac{1}{4}, \frac{1}{2}]$ (b) $[\frac{1}{2}, 1]$ (c) $[\frac{1}{4}, \frac{3}{4}]$ (d)$[\frac{1}{2}, \frac{3}{4}]$

ASSERTION − REASON

75. **Assertion-** The reason $R = \{(x, y): (x + y) \ is \ a \ prime \ number \ and \ x, y \in N\}$ is not a reflexive

relation

Reason- The number $'2n'$ is composite for all natural number n.

76. **Assertion-** Let S be a relation on set R of real numbers defined by $S = \{(a, b) : 1 + ab > 0, a, b \in R\}$

S on R is symmetric relation.

Reason- S on R is transitive relation.

77. **Assertion-** The relation $I = \{(x, y) (y, y) (z, z) (t, t)\}$ is the identity relation on set $A = \{x, y, z, t\}$.

Reason- A relation I on set A is the identity relation if every element of A is related to itself only.

78. **Assertion-** Let A be a set consisting of n elements. The number of reflexive relation on A is $2^{n(n-1)}$

Reason- A relation on a non-empty set A is a subset of $A \times A$.

79. **Assertion -** The domain of the function $f(x) = \log(3x − 2)$ is $\left(\frac{2}{3}, \infty\right)$.

Reason − The domain of the function $g(x) = \frac{1}{\sqrt{3x-2}}$ is $\left(\frac{2}{3}, \infty\right)$.

80. **Assertion −** Let A and B be two sets having m & n elements respectively such that $m < n$. Then,

number of surjective from A to B = $\sum_{r=1}^{n} {}^n_r c(-1)^{n-r} r^m$

Reason - If $f: A \rightarrow B$ is a surjection, then every element of B has a pre image in A.

81. **Assertion -** If two set X & Y contain 3 and 5 elements respectively,then $C_3^5 \times 3!$ one- one functions

can be defined from X to Y.

Reason - A one one function from $X \ to \ Y$ relates different elements of set X to different elements

Of set X to different elements of set Y.

82. **Assertion** - A function $f: R - \{0\} \to R - \{0\}$ is defined by $f(x) = \frac{1}{x}$ is $one - one$

    Reason - A function $f: R - \{0\} \to R - \{0\}$ is defined by $f(x) = \frac{1}{x}$ is $not\ onto$

83. **Assertion** - The function $f: R \to R$ defined by $f(x) = \frac{x}{x^2+1}$ is not one one.

    Reason - $f(4) = \frac{4}{17}$ anf $f\left(\frac{1}{4}\right) = \frac{4}{17}$

84. **Assertion** - Let m, n be natural numbers other than 1. Then, (i) $2^{mn} > n^m$ (ii) $2^{mn} > m^n$

    Reason - Every function is a relation but a relation need not be a function.

Very short answer type questions – 2 marks each

85. A relation R in $S = \{1,2,3\}$ is defined as $R = \{(1,1)\ (1,2)\ (2,2)\ (3,3)\ (3,1)\}$. Which elements of relation R be removed to make R an equivalence relation?

86. Let R be the relation in the set Z of integers given by $R = \{(a,b) : 2\ divides\ a - b\}$. Show that the relation R is transitive ? Write the equivalence class $[0]$.

87. Let $A = \{1,2,3,4\}$. Let R be the equivalence relation on $A \times A$ defined by $(a,b)R(c,d)$ iff $a + d = b + c$. Find the equivalence class $[(1,3)]$.

88. How many equivalence relations on the set $\{1,2,3\}$ containing $(1,2)$ and $(2,1)$ are there in all? Justify your answer.

89. An equivalence relation R in A divides it into equivalence classes A_1, A_2, A_3. What is the value of $A_1 \cup A_2 \cup A_3$ & $A_1 \cap A_2 \cap A_3$.

90. A relation R in the set or real numbers R defined as $R = \{(a,b) : \sqrt{a} = b\}$ is a function or not. Justify.

91. Check whether the function $f: R \to R$ defined as $f(x) = x^3$ is one-one or not.

92. X & Y are two sets with their number of elements being k & l respectively ($k < l$). Find the number of onto functions that can be defined from set $X\ to\ Y$. Explain your answer.

93. A function $f: A \to B$ defined as $f(x) = 2x$ is both one-one onto. If $A = \{1,2,3,4\}$, then find the set B.

94. Find the range of the function, $f(x) = P_{x-3}^{7-x}$

95. Find domain and range of the real valued function defined by $f(x) = \frac{1}{x^2-1}$

96. Let the function $f: R \to R$ be defined by $f(x) = 4x - 1, \forall x \in R$. Then show that f is one-one.

97. Let the function $f: R \to R$ be defined by $f(x) = 2x + \sin x, \forall x \in R$. Then show that f is onto.

Short answer type Quesions – 3 marks each

98. A relation R on the set $A = \{1,2,3,4,5\}$ is defined as $R = \{(x,y) : |x^2 - y^2| < 8\}$. Check whether the relation R is reflexive, symmetric & transitive.

99. Check whether the relation R in the set N of natural number given by $R = \{(a,b) :$ $a\ is\ divisor\ of\ b\}$ is reflexive, symmetric or transitive. Also determine whether R is an equivalence relation.

100. Check whether the relation R defined on the set $A = \{1,2,3,4,5,6\}$ as $R = \{(a,b) :$ $b = a + 1\}$ is reflexive, symmetric or transitive.

101. Let Q be the set of rational numbers and R be a relation on Q defined by $R = \{(x,y) : x, y \in Q, x^2 + y^2 = 5\}$. Check that relation R is reflexive, symmetric or transitive?

102. Show that the relation S in the set $A = \{x\epsilon\ Z : 0 \le x \le 12\}$ given by $S = \{(a,b) :$ $a, b \in A, |a - b| is\ divisible\ by\ 3\}$ is an equivalence relation.

103. A relation R in the set $G = \{All\ the\ countries\ in\ the\ world\}$ is defined as $R = \{(x,y) : x\ \&\ y\ shares\ the\ common\ bondry\}$. Determine whether R is equivalence relation ?

104. A function f is defined from $R \to R$ as $(x) = ax + b$, such that $f(1) = 1$ and $f(2) = 3$. Find function $f(x)$. Hence, check whether function $f(x)$ is one-one and onto or not.

105. Show that the modulus function $f: R \to R$, given by $f(x) = |x|$, is neither one one nor onto.

106. Show that the Greatest integer function $f: R \to R$, given by $f(x) = [x]$, is neither one one nor onto.

107. Show that the function $f: R - \{-1\} \to R - \{1\}$ given by $f(x) = \frac{x}{x+1}$ is bijective.

108. Let A & B be sets, Show that $f: A \times B \to B \times A$ such that $f(a,b) = (b,a)$ is bijective function.

109. If the function $f : R \to A$ given by $f(x) = \frac{x^2}{x^2+1}$ is a surjection, then find set A.

110. Consider a bijective function $f: R_+ \to (7, \infty)$ given by $f(x) = 16x^2 + 24x + 7$, where R_+ is the set of all positive real numbers. Find the inverse function of f.

Long answer type questions – 5 marks each

111. Let N be the set of natural numbers and R be the relation on $N \times N$ defined by $(a,b)R(c,d)$ iff

$ad = bc$ for all $a, b, c, d \in N$. Show that R is an equivalence relation.

112. A relation R is defined on $N \times N$ as $(a,b)R(c,d)$ iff $a - c = b - d$,where N is set of all natural numbers . show that R is an equivalence relation.

113. Let N denotes the set of all natural numbers and R be the relation on $N \times N$ defined by $(a,b)R(c,d)$

iff $ad(b + c) = bc(a + d)$, Show that R is an equivalence relation.

114. Check whether the relation S in the set of real numbers R defined by $S = \{(a,b) :$ $where\ a - b + \sqrt{2}$ is an irrational number $\}$ is reflexive, symmetric or transitive.

115. Given a non empty set X, define the relation R in $P(X)$ as follows: For A,B $\in P(X)$, $(A,B) \in R$ iff

A is the subset of B. Prove that R is reflexive, transitive and not symmetric.

116.   Prove that a function $f: [0, \infty) \to [-5, \infty)$ defined as $f(x) = 4x^2 + 4x - 5$ is one − one and onto.

117.   Show that a function $f: R \to R$ defined by $f(x) = \frac{2x}{1+x^2}$ is neither one –one nor onto. Further, find set A so that the given function $f: R \to A$ becomes an onto function.

118.   A function $f: [-4, 4] \to [0, 4]$ is given by $f(x) = \sqrt{16 - x^2}$. Show that f is an onto function but not a one one function. Further, find all possible values of $'a'$ for which $f(a) = \sqrt{7}$.

119.   If $f(x) = 3 + \left(\frac{e^{3x} + e^{-3x}}{e^{3x} - e^{-3x}}\right)$ and $f^{-1}(x) = \frac{1}{A} g(x)$.find : (i) the value of A   (ii) $g(x)$

120.   Prove that the function $f: N \to N$ defined by $f(x) = x^2 + x + 1$ is one one but not onto . Find inverse of $f: N \to S$, where S is range of f.

121.   Let $A = R - \{5\}$ & $= R - \{1\}$. Consider the function $f: A \to B$ defined by $f(x) = \frac{x-3}{x-5}$. Show that f is one one and onto.

122.   Check whether a function $f: R \to \left[-\frac{1}{2}, \frac{1}{2}\right]$ defined as $f(x) = \frac{x}{1+x^2}$ is one one and onto or not.

123.   Let $f: R - \left\{-\frac{4}{3}\right\} \to R$ be a function defined as $(x) = \frac{4x}{3x+4}$. Show that f is a one one function. Also ckeck whether f is an onto function or not?

124.   A function $f: R - \{-1, 1\} \to R$ defined by $f(x) = \frac{x}{x^2-1}$

(i)   Check if f is one- one

(ii)   Check if f is onto

125.   Prove that the function f is surjective, where $f: N \to N$ such that $f(n) =$

$\begin{cases} \frac{n+1}{2} & \text{if } n \text{ is odd} \\ \frac{n}{2} & \text{if } n \text{ is even} \end{cases}$

Is the function injective ? Justify your answer.

126.   Show that a function $f: (-\infty, 0) \to (-1, 0)$ defined as $f(x) = \frac{x}{1+|x|}$, $x \in (-\infty, 0)$ is one- one & onto

127.   Show that the function $f: R \to R$ defined by $f(x) = x^2 + x + 1$ is neither one one nor onto . Also , find the values of x for which $f(x) = 3$.

128.   Let $f: W \to W$ be defined as $(n) = \begin{cases} n - 1, if n \text{ is odd} \\ n + 1, if n \text{ is even} \end{cases}$. Show that f is invertible. W is set of whole numbers.

129.   Let R be a relation on the set of natural numbers N as follows:
$R = \{(x, y) : x \in N, y \in N, 2x + y = 41\}$. Find the domain & range of the range of the relation R. Also verify whether R is reflexive , symmetric & transitive.

Case Study based Questions – 4 marks each

130. Students of a school are taken to a railways museum to learn about railways heritage and its history.

An exhibition in the museum depicts many rail lines on the track near the railway station. Let L be the set of all rail lines on the railway station . Let L be the set of all rail lines on the railway track and R be the relation on L defined by : $R = \{(l_1, l_2) : l_1 \text{ is parallel to } l_2\}$

Based on the above information , answer the following questions:

(i) Find whether the relation R is symmetric or not?

(ii) Find whether the relation R is transitive or not?

(iii) If one of the rail lines on the railway track is represented by the equation $y = 3x + 2$, then find the set of rail lines in R related to it.

OR

Let S be the relation defined by $S = \{(l_1, l_2) : l_1 \text{ is perpendicular to } l_2\}$ check whether the relation S is symmetric & transitive.

131. An organization conducted bike race under two different categories— Boys and Girls. There were 28 participants in all. Among all of them, finally three from category I and two from category 2 were selected for the final race. Ravi forms two sets B & G with these participants for his college project.

Let $B = \{b_1, b_2, b_3\}$ & $G = \{g_1, g_2\}$, where B represents the set of Boys selected and G represents the set of Girls selected for the final race.

Based on the above information , answer the following questions:

(i) How many relations are possible from B to G?

(ii) Among all the possible relations from B to G, how many functions can be formed from B to G.

(iii) Let $R: B \to B$ be defined by $R = \{(x, y) : x \& y \text{ are students of the same gender}\}$. Check R is equivalence or not?

OR

A function $f: B \to G$ be defined by $f = \{(b_1, g_1), (b_2, g_2), (b_3, g_1)\}$. Check if f is bijective. Justify your answer.

132. Raji visited the amusement park with her family. The amusement park featured a huge swing that attracted many children. Raji noticed that the swing traced the path of a parabola given by $y = x^2$.

Based on the above information , answer the following questions:

(i) If $f: R \to R$ is defined by $f(x) = x^2$, then show that f is neither injective nor surjective.

(ii) If $f: N \to N$ is defined by $f(x) = x^2$, then show that f is injective but not surjective.

(iii) If $f: \{1,2,3,4 \ldots\} \to \{1,4,9,16, \ldots\}$ is defined by $f(x) = x^2$, then show that f is bijective.

OR

Show that the function $f: Z \to Z$ defined by $f(x) = x^2$ is neither injective nor surjective.

133. In a school, the students of class XII were discussing Relations and Functions. Two students wrote the first four natural numbers and the vowels of the English alphabets in the form of sets as follows:

$$A = \{1,2,3,4\}\,; B = \{a,e,i,o,u\}$$

Based on the above information , answer the following questions:

(i) Find the number of relations from set A to set B.

(ii) Find the number of functions from set A to set B.

(iii) If the function $f: A \to B$ is defined by $= \{(1,a)\ (2,e)\ (3,i)\ (4,u)\}$, is f One -one into?

OR

Find the numbers of one one function from set A to set B.

134. A factory manufactures a triangular shaped sachet for sauce. These all triangular shaped sachet are same in shape and size. Let T be the set of all triangles in a plane with R a relation in T given by

$$R = \{(T_1, T_2) \in R \Rightarrow T_1 \text{ is congruent to } T_2\}$$

Based on the above information , answer the following questions:

(i) State whether the relation R on the set T is reflexive or not. Give reason.

(ii) State whether the relations R on the set T is symmetric or not. Give reason.

(iii) State whether the relation R on the set T is an equivalence relation?

OR

State whether the relation R on the set T is transitive or not. Give reason.

135. A general election of Lok sabha is a gigantic exercise. About 911 million people were eligible to vote and voter turnout was about 67%, the highest ever. Let I be the set of all citizens of India who were eligible to exercise their voting right in general election held in 2019. A relation 'R' is defined on I as follows: $R = \{(V_1, V_2) : V_1, V_2 \in I$ & both use their voting right in general election $- 2019\}$

(i) Two neighbours & $Y \in I$. X exercised his voting right while Y did not cast her vote in general election -2019. Check whether X is related to Y or not.

(ii) Mr. X and his wife W both exercised their voting right in general election-2019. Show that

$(X, W) \in R$ & $(W, X) \in R$.

(iii) Show that the relation R defined on set I is an equivalence relation.