

SHREE VASISHTHA VIDHYALAYA

(English Medium, CBSE affiliated, Member-NPSC, Recipient-International School Award)

PA-III Assignment: 2026 27

Class-XII Commerce

DATE OF SUBMISSION: 22-10-2026 (Thursday)

1.	ENGLISH CORE
	Level 1: Easy 1. Who was Rajkumar Shukla? 2. Where did Gandhi first meet Rajkumar Shukla? 3. What crop were the sharecroppers of Champaran forced to grow for their landlords? 4. Who wrote <i>Poets and Pancakes</i>? 5. What was Gemini Studios? 6. Who wrote <i>On the Face of It</i>? 7. Why was Derry unwilling to meet people? 8. What did Mr Lamb have in place of one of his legs? 9. Who wrote <i>A Roadside Stand</i>? 10. What do the farmers sell at the roadside stand? Level 2: Intermediate (40–50 words each) 11. Why did Gandhi refuse to leave Champaran when the magistrate ordered him to? 12. Why did Gandhi accept a settlement of 25 per cent refund to the sharecroppers? 13. How did Gandhi's stay in Champaran help the peasants overcome their fear? 14. Explain the title <i>Poets and Pancakes</i>. 15. How does the narrator describe his own job at Gemini Studios, and what does this tell us about the studio? 16. How does Mr Lamb's attitude towards life differ from Derry's at the start of <i>On the Face of It</i>? 17. What is the significance of the garden in <i>On the Face of It</i>? 18. What is the poet's attitude towards the farmers in <i>A Roadside Stand</i>? 19. How do the city people behave towards the farmers in <i>A Roadside Stand</i>? What does this show about them? 20. Why does the poet say that the poor farmers' hope is in vain? Explain with reference to the poem. Level 3: Advanced (120–150 words each) 21. "The Champaran episode was Gandhi's first lesson in civil disobedience and self-reliance." Discuss with evidence from <i>Indigo</i>. 22. According to Gandhi, freedom from fear mattered more than legal relief for the peasants. Do you agree? Justify your view. 23. Evaluate the role played by the lawyers and other Indians in Gandhi's Champaran campaign. How did their attitude change? 24. How does Asokamitran use humour and gentle satire in <i>Poets and Pancakes</i> to comment on the world of cinema? 25. Mr Lamb is both a friend and a teacher to Derry. Justify this statement with evidence from <i>On the Face of It</i>. 26. "Derry's struggle is not only with his scarred face but also with society's attitude towards it." Discuss. 27. <i>A Roadside Stand</i> is a poem about rural poverty and urban indifference. Discuss how the poet presents this contrast. 28. Compare how <i>A Roadside Stand</i> and <i>On the Face of It</i> present society's treatment of the vulnerable.

29. Compare Gandhi in *Indigo* and Mr Lamb in *On the Face of It* as people who restore the confidence of others.
30. Write a diary entry of 120 words by Derry after his first visit to Mr Lamb's garden, describing how his feelings change.

2. ACCOUNTANCY

LEVEL 1:

- Q1.** A company issued 10,000 equity shares of ₹10 each at a premium of ₹2 per share. The premium was payable on allotment. What amount will be credited to Securities Premium Account?
A. ₹10,000 B. ₹20,000 C. ₹30,000 D. ₹1,00,000
- Q2.** Q2. A company invited applications for 10,000 shares and received applications for 20,000 shares. Applications were accepted on a prorata basis. An applicant applied for 600 shares and was allotted 300 shares. If the application money was ₹3 per share, what amount of excess application money will be adjusted towards allotment?
A. ₹300 B. ₹600 C. ₹900 D. ₹1,800
- Q3.** A company forfeited 100 shares of ₹10 each on which ₹5 per share had been received. These shares were reissued at ₹7 per share as fully paid. What amount will be transferred to Capital Reserve?
A. ₹200 B. ₹300 C. ₹500 D. ₹700
- Q4.** A shareholder holding 500 shares of ₹10 each failed to pay the final call of ₹2 per share. The company forfeited the shares. Assuming all other amounts had been paid, what amount would be credited to Share Forfeiture Account?
A. ₹1,000 B. ₹2,000 C. ₹4,000 D. ₹5,000
- Q5.** A company issued 1,000 debentures of ₹100 each at a discount of 5%. What amount will be credited to Debentures Account?
A. ₹5,000 B. ₹95,000 C. ₹1,00,000 D. ₹1,05,000
- Q6.** A company issued 2,000 debentures of ₹100 each at par, redeemable at a premium of 5%. What is the total loss on issue of debentures, assuming no other issue costs?
A. ₹5,000 B. ₹10,000 C. ₹1,90,000 D. ₹2,10,000
- Q7.** A company has 5,000, 10% debentures of ₹100 each. What interest expense will accrue for six months?
A. ₹25,000 B. ₹50,000 C. ₹5,00,000 D. ₹2,50,000
- Q8.** A company issues 1,000 debentures of ₹100 each at ₹96, redeemable at ₹105. What is the total loss on issue of debentures?
A. ₹4,000 B. ₹5,000 C. ₹9,000 D. ₹1,05,000
- Q9.** Under Schedule III of the Companies Act, 2013, inventory held for sale in the ordinary course of business is generally classified as:
A. Non-current asset B. Current asset
C. Shareholders' funds D. Non-current liability
- Q10.** Trade receivables arising from the normal sale of goods on credit are generally presented under which heading in the Balance Sheet.
A. Current assets B. Non-current assets
C. Share capital D. Other equity
- Q11.** Interest on debentures paid by a company is presented in the Statement of Profit and Loss under:
A. Revenue from operations B. Other comprehensive income
C. Finance costs D. Shareholders' funds
- Q12.** A company has the following balances: equity share capital ₹5,00,000, securities premium ₹1,00,000, and general reserve ₹2,00,000. Assuming no other balances, what is the total amount of shareholders' funds?
A. ₹5,00,000 B. ₹6,00,000 C. ₹7,00,000 D. ₹8,00,000

LEVEL 2 :

- Q1.** A company invited applications for 15,000 equity shares of ₹10 each, payable ₹3 on application and the balance on allotment. Applications were received for 20,000 shares, and shares were allotted to applicants on a pro-rata basis. An applicant who applied for 800 shares was allotted 600 shares.
- Calculate:

- (a) The excess application money received from the applicant.
 (b) The allotment money payable by the applicant, assuming the excess application money is adjusted towards allotment.
- Q2.** A company forfeited 200 equity shares of ₹10 each for non-payment of the final call of ₹3 per share. The shareholder had paid ₹7 per share on application and allotment. Pass the journal entry for forfeiture of shares.
- Q3.** A company forfeited 500 equity shares of ₹10 each, on which ₹6 per share had been received. These shares were subsequently reissued at ₹8 per share as fully paid.
 Pass the journal entries for: (a) Reissue of shares. (b) Transfer of the profit on reissue to Capital Reserve.
- Q4.** A company issued 10,000 equity shares of ₹10 each at a premium of ₹3 per share. The premium was payable on allotment. Calculate the amount to be credited to Securities Premium Account and state any two purposes for which this account may be utilised under the Companies Act, 2013.
- Q5.** A company issued 5,000, 10% debentures of ₹100 each at 4% discount, redeemable at a premium of 5%. Pass the journal entry for the issue of debentures.
- Q6.** A company issued 2,000, 9% debentures of ₹100 each at a premium of 5%, payable in full on application. Pass the necessary journal entries for the issue of debentures.
- Q7.** A company has 4,000, 10% debentures of ₹100 each outstanding throughout the financial year. Calculate the annual interest on debentures and pass the journal entry for the interest due, ignoring tax deduction at source.
- Q8.** A company issued 3,000, 12% debentures of ₹100 each at par, redeemable at a premium of 10%. Calculate:
 (a) The total amount received on issue.
 (b) The total premium payable on redemption.
 (c) The total loss on issue of debentures and its accounting treatment.
- Q9.** A company issued 1,000, 10% debentures of ₹100 each at par as collateral security for a bank loan of ₹80,000. Explain the meaning of issue of debentures as collateral security and state one method of recording such an issue in the books of accounts.
- Q10.** Under Schedule III of the Companies Act, 2013, classify the following items under the appropriate major heads and sub-heads of the Balance Sheet:
 (a) Inventory (b) Trade receivables (c) Securities Premium

LEVEL 3:

- Q1.** From the following information, calculate the total of Equity and Liabilities to be presented in the Balance Sheet of a company:

Particulars	Amount (₹)
Equity Share Capital	6,00,000
Securities Premium	1,00,000
General Reserve	2,00,000
Long-term Borrowings	3,00,000
Trade Payables	1,50,000
Outstanding Expenses	50,000

- Q2.** The following information relates to Zenith Ltd. for the year ended 31 March 2026:

Particulars	Amount (₹)
Revenue from Operations	12,00,000
Other Income	50,000
Cost of Materials Consumed	4,00,000
Employee Benefits Expense	2,00,000
Depreciation and Amortisation Expense	50,000
Other Expenses	1,00,000

Calculate the profit before tax, assuming there are no other expenses or items of income.

Q3. The following information is extracted from the books of a company:

Particulars	Amount (₹)
Equity Share Capital	8,00,000
Securities Premium	1,50,000
Retained Earnings	2,50,000
Long-term Borrowings	4,00,000
Short-term Borrowings	1,00,000
Trade Payables	75,000

Prepare the relevant extract of the Equity and Liabilities section of the Balance Sheet, classifying the items under the appropriate heads as per Schedule III of the Companies Act, 2013.

Q4. Delta Ltd. had issued equity shares of ₹10 each at a premium of ₹2 per share. The amount was payable as follows:

₹3 per share on application

₹5 per share on allotment, including the premium

₹4 per share on first and final call

A shareholder holding 1,000 shares paid the application money but failed to pay the allotment and first and final call money. The company forfeited these shares.

Subsequently, 800 of the forfeited shares were reissued at ₹9 per share as fully paid-up shares.

Pass the journal entries for forfeiture and reissue of the shares and calculate the amount transferred to Capital Reserve.

Q5. Zeta Ltd. issued 3,000, 12% debentures of ₹100 each at par on 1 April 2026. The debentures were redeemable at par.

The annual interest was due and paid on 31 March 2027. Assume that no tax was deducted at source. Calculate the total issue proceeds and annual interest. Pass the journal entries for the issue of debentures, the interest becoming due, payment of interest and transfer of interest expense to the Statement of Profit and Loss.

Q6. Omega Ltd. issued 2,000, 10% debentures of ₹100 each at a discount of 5%. The debentures were redeemable at a premium of 10%.

The company had an existing Securities Premium balance of ₹12,000. Calculate the cash received, discount on issue, premium payable on redemption and total loss on issue. Pass the journal entries for the issue and writing off the loss.

Q7. Sigma Ltd. issued 4,000, 9% debentures of ₹100 each for cash at a premium of 8%. The debentures were redeemable at par. Calculate the total issue proceeds and Securities Premium. Pass the necessary journal entry for the issue of debentures.

Q8. Theta Ltd. obtained a bank loan of ₹5,00,000. The bank required additional security in the form of 6,000, 10% debentures of ₹100 each.

The company issued the debentures as collateral security for the loan.

Pass the necessary journal entries under both methods of accounting for debentures issued as collateral security. Also, show the relevant presentation in the Balance Sheet under each method.

Q9. Lambda Ltd. purchased machinery from a vendor for ₹5,25,000. The purchase consideration was settled by issuing 5,000, 10% debentures of ₹100 each at a premium of 5%. The debentures were redeemable at par after five years. Calculate the issue price per debenture and pass the necessary journal entries for the purchase of machinery and settlement of the vendor's account.

Q10. A. Arman Ltd. issued 750, 12% Debentures of ₹100 each at a discount of 10% redeemable at a premium of 5%.

B. Sohan Ltd. issued 800, 9% Debentures of ₹100 each at a premium of 20 per debenture redeemable at a premium of ₹10 per Debenture.

C. X Ltd. obtained a loan of ₹4,00,000 from IDBI Bank. The company issued 5,000 9% Debentures of ₹100 each as a collateral security for the same. Show how these items will be presented in the Balance Sheet of the company.

3.	BUSINESS STUDIES
	Section A: Easy Level Q1. State the element of directing that refers to the process of guiding and instructing subordinates at work. Q2. Which function of management ensures that activities conform to the standards set in planning? Q3. Name the financial decision that involves deciding how much profit to retain in the business and how much to distribute among shareholders. Q4. Identify the type of barrier to communication exemplified by "unclarified assumptions" and "technical jargon." Q5. Complete the sentence: Controlling is considered a _____-looking as well as a _____-looking function. Q6. Define Capital Structure. Q7. Name the lowest level of need in Abraham Maslow's Need Hierarchy Theory. Q8. What is the primary objective of Financial Management? Q9. Name the principle of controlling which states that an attempt to control everything may result in controlling nothing. Q10. Give any two examples of non-financial incentives that fulfill the esteem and self-actualization needs of employees. Section B: Medium Level Q11. Radhika, an HR executive, observed that employees in the packaging unit were not cooperating because the manager used an authoritarian leadership style and gave instructions without listening to suggestions. (a) Identify the leadership style being practiced by the manager. (b) State any two characteristics of an alternative leadership style that could help improve employee morale in this unit. Q12. Explain how the following factors affect the Working Capital requirements of a business: (a) Length of operating cycle (b) Credit allowed by suppliers (c) Nature of business (Trading vs. Manufacturing) Q13. Differentiate between Critical Point Control (CPC) and Management by Exception (MBE) with suitable examples for each. Q14. Briefly explain any three Psychological Barriers to effective communication in an organization. Q15. Zenith Garments Ltd. is planning to modernize its factory with computerized stitching machines worth ₹2 crores. (a) Which type of financial decision is this? (b) State any two factors that the company should evaluate before taking this decision. Q16. Distinguish between Financial Incentives and Non-Financial Incentives. Give two examples of each. Q17. A supervisor at a toy factory set a standard of assembling 40 toys per day per worker. At the end of the week, the average output was only 28 toys per worker. Identify the next two steps the supervisor must perform in the controlling process to address this issue. Q18. "Sound financial planning is essential for the smooth running of an enterprise." State any three points highlighting the importance of financial planning. Q19. Explain the following terms in the context of the communication process: (a) Encoding (b) Decoding (c) Feedback Q20. Explain the impact of Growth Opportunities and Cash Flow Position on the dividend decision of

a company.

Section C: Hard Level

- Q21. A company has a total capital employed of ₹50,00,000 consisting entirely of Equity Share Capital of ₹10 each. To fund an expansion project, it requires an additional ₹30,00,000. The company can raise this amount either by:
Option I: Issuing Equity Shares at par (₹10 each).
Option II: Issuing 10% Debentures of ₹100 each.
The company's expected Earnings Before Interest and Tax (EBIT) after expansion is ₹12,00,000. The corporate tax rate is 30%.
- (a) Calculate Earnings Per Share (EPS) under both options.
(b) State whether the company should use debt capital. Name this phenomenon and justify your answer.
- Q22. Pradeep joined a software firm as a junior programmer. Initially, he was happy with his regular salary and provident fund benefits. After two years, he was given an independent module to lead, received appreciation from the client, and was awarded "Employee of the Quarter." However, he now aspires to create an open-source operating system of his own and feels restless because his current routine does not challenge his full potential.
- (a) Identify the three levels of needs in Maslow's hierarchy depicted in Pradeep's career journey, quoting lines from the text.
(b) Explain the highest-level need that remains unfulfilled.
- Q23. AutoParts India Ltd. set a production benchmark of manufacturing 1,000 spark plugs per day with an allowable variation limit of $\pm 2\%$. On Monday, the production was 985 units; on Tuesday, 940 units; on Wednesday, 910 units; and on Thursday, 850 units. The plant head ignored the variation on Monday but initiated an investigation on Thursday, discovering that old machinery and power fluctuations were causing breakdowns.
- (a) Identify the technique of controlling applied by the plant head on Monday.
(b) Trace and explain all the steps of the controlling process reflected in this case study.
(c) Suggest two corrective actions the management should take.
- Q24. Sun Pharma Ltd. is considering raising ₹100 crore for vaccine research. The Chief Financial Officer recommends using Debentures, citing high Return on Investment (ROI) and a favorable stock market condition. However, the Managing Director argues that equity is safer because it carries no fixed commitment.
Evaluate four factors other than cost and risk that will influence the choice of capital structure for Sun Pharma Ltd.
- Q25. A multinational logistics company is facing operational delays because warehouse managers frequently misunderstand emails sent by corporate headquarters due to complex technical language, pre-conceived notions about head-office policies, and a rigid chain of command.
- (a) Identify and categorize the three distinct barriers to communication illustrated here.
(b) Suggest any three concrete measures the company should adopt to improve communication effectiveness.
- Q26. Apex Steel Ltd. manufactures heavy industrial boilers and turbines, whereas QuickBite Ltd. operates a chain of fast-food retail outlets.
Compare and analyze the requirements of Fixed Capital and Working Capital for both companies, giving at least three clear business reasons for the differences.
- Q27. A software company noticed high attrition among its top developers. To retain them, the management introduced:
Stock options allowing employees to buy company shares at a discount.
- (i) A policy where top performers are invited to participate in setting company product roadmaps.
(ii) Free executive health checks and premium family insurance coverage.

	(a) Classify each of these incentives into Financial or Non-Financial categories, and name the specific incentive type. (b) Explain how stock options create organizational loyalty among employees. Q28. "Planning is backward-looking and controlling is forward-looking." Critically examine this statement. Can an organization practice effective controlling without planning? Explain. Q29. Explain the concept of Trading on Equity. Under what specific conditions does financial leverage work adversely for the equity shareholders? Illustrate with a brief hypothetical scenario. Q30. Mr. Roy, the newly appointed production director of an electronics firm, believes that workers inherently dislike work and must be closely monitored, threatened with penalties, and given strictly standardized orders without room for personal initiative. Within six months, productivity dropped and absenteeism spiked. (a) Identify the leadership style practiced by Mr. Roy. (b) How does this leadership style affect subordinate morale and creativity? (c) Recommend an alternative leadership style that Mr. Roy should adopt, explaining how it will help reverse the decline.
4.	ECONOMICS
	Section A — Easy level (10 questions) Chapter 10: Government Budget and the Economy 1. (1 mark) What is a government budget? 2. (2 marks) Differentiate between revenue receipts and capital receipts, giving one example of each. 3. (3 marks) Explain any three objectives of a government budget. Chapter 4: Human Capital Formation in India 4. (1 mark) What is meant by human capital formation? 5. (2 marks) State any two sources of human capital formation in India. 6. (3 marks) Explain how investment in education contributes to economic growth. Chapter 5: Rural Development 7. (1 mark) What is rural development? 8. (2 marks) What is agricultural diversification? Give one example. 9. (3 marks) Explain any three major problems faced by rural farmers in obtaining credit. Mixed chapter question 10. (3 marks) Explain the role of health in human capital formation and improving the productivity of workers in rural areas. Section B — Moderate level (10 questions) Chapter 10: Government Budget and the Economy 11. (3 marks) Distinguish between a revenue deficit, a fiscal deficit and a primary deficit. 12. (4 marks) From the following data, calculate revenue deficit, fiscal deficit and primary deficit. All figures are in ₹ crore. • Revenue expenditure: 800 • Revenue receipts: 650 • Capital expenditure: 300 • Non-debt capital receipts: 50 • Interest payments: 100 13. (4 marks) Explain how a government budget can be used to reduce inequalities in the distribution of income and wealth. Chapter 4: Human Capital Formation in India 14. (3 marks) Differentiate between human capital and human development on any three grounds. 15. (4 marks) Explain any four ways in which human capital formation contributes to the economic development of a country. 16. (4 marks) "Migration of educated and skilled people from India to other countries may result in a loss of human capital." Explain the statement and mention one possible benefit of such migration for India. Chapter 5: Rural Development 17. (3 marks) Explain the importance of rural credit in agricultural development. Why do institutional sources of credit need to be strengthened? 18. (4 marks) Explain any four measures that can be adopted to improve agricultural marketing in

India.

19. **(4 marks)** What is organic farming? Explain any three advantages and one limitation of organic farming.

Mixed chapter question

20. **(4 marks)** Explain how government expenditure on education, healthcare and rural infrastructure can contribute to human capital formation and rural development.

Section C — Hard level (10 questions)

Chapter 10: Government Budget and the Economy

21. **(4 marks)** Consider the following data for an economy (₹ crore):

- Revenue receipts: 1,200
- Revenue expenditure: 1,450
- Capital expenditure: 500
- Recovery of loans: 100
- Disinvestment proceeds: 50
- Interest payments: 200

Calculate:

(a) Revenue deficit (b) Fiscal deficit (c) Primary deficit

22. **(4 marks)** The government increases expenditure on rural roads, irrigation and public healthcare, financing part of the expenditure through borrowing.

Analyse the possible effects of this policy on:

(a) Employment and output (b) Human capital formation (c) Fiscal deficit and public debt (d) Long-term economic growth

23. **(6 marks)** “A fiscal deficit is not always harmful to an economy, but a persistently high fiscal deficit may create serious economic problems.”

Critically examine the statement. Explain the circumstances in which a fiscal deficit can promote growth and the possible adverse consequences of excessive borrowing.

Chapter 4: Human Capital Formation in India

24. **(4 marks)** Read the following case and answer the questions.

A state government increases spending on schools, vocational training and primary healthcare. Over time, school attendance improves, workers become healthier, and more young people acquire technical skills.

(a) Identify two sources of human capital formation described in the case. (2 marks) (b) Explain how these investments can improve labour productivity and national income. (2 marks)

25. **(6 marks)** “Human capital formation is essential for economic growth, but economic growth alone does not guarantee human development.”

Explain the statement with reference to education, health, employment opportunities and the distribution of the benefits of growth.

26. **(4 marks)** A country spends heavily on higher education but neglects primary education, public health and vocational training. Many graduates remain unemployed despite having formal qualifications.

Analyse any four reasons why this pattern of investment may fail to generate adequate human capital and economic growth.

Chapter 5: Rural Development

27. **(4 marks)** A village depends almost entirely on food-grain cultivation. Farmers face seasonal unemployment, fluctuating crop prices and unstable incomes.

Suggest and explain four suitable measures of rural development that could address these problems.

28. **(6 marks)** “Diversification of productive activities in rural areas is necessary for sustainable rural development.”

Justify the statement by explaining the role of non-farm employment, animal husbandry, fisheries, horticulture and other allied activities. Also explain how diversification can reduce farmers’ income risks.

29. **(4 marks)** A group of small farmers switches from chemical-intensive farming to organic farming. Initially, their production costs fall, but they face difficulties obtaining certification and finding buyers willing to pay higher prices.

Analyse the major opportunities and challenges associated with organic farming in this situation.

Integrated application question

30. **(6 marks)** The government is considering two development plans for a rural district.

- **Plan A:** Increase subsidies for current consumption and provide short-term financial

	assistance. • Plan B: Invest in schools, primary healthcare, irrigation, rural roads, skill development and institutional agricultural credit. Evaluate both plans from the perspective of government budgeting, human capital formation and rural development. Which plan is more likely to support sustainable long-term development, and why? Explain any limitations of your preferred plan.
5.	INFORMATICS PRACTICES
	Q1. What is the fundamental structural difference between a Series and a DataFrame object in the Pandas library? Provide a short Python snippet demonstrating how to check their dimensions. Q2. Explain the distinct operational difference between the loc[] and iloc[] indexing indexing methods in a Pandas DataFrame. Q3. Write a Python code snippet to locate and drop all rows containing NaN missing values specifically within the 'Salary' column of a DataFrame named emp_df. Q4. Imagine a DataFrame sales_df has columns: 'Region', 'Product', and 'Revenue'. Provide the Pandas statement required to compute the total revenue grouped by each Region. Q5. What are the two primary methods to append or join new data rows to an existing DataFrame structure, and how do they differ in practice? Q6. When communicating data patterns, what categorical scenarios dictate choosing a Histogram over a standard Bar Chart? Q7. What is the explicit purpose of the plt.legend() function in a multi-series graph, and how do you customize its position on the canvas? Q8. Conduct a comparative structural analysis between a Hub and a Network Switch operating inside a local area topology. Q9. What is the core structural purpose of the Domain Name System (DNS) infrastructure in web networking architecture? Q10. Define the conceptual boundary and operational utility separating a Router from a network Gateway.
6.	PHYSICAL EDUCATION
	Level 1: Easy Questions 1 mark each Basic concepts and definitions 1. Define test, measurement, and evaluation in sports. 2. What is the full form of BMI? 3. Name any two tests included in the SAI Khelo India Fitness Test for students aged 9–18 years. 4. What is the purpose of the Harvard Step Test? 5. What is Basal Metabolic Rate (BMR)? 6. Define biomechanics in sports. 7. State Newton's First Law of Motion. 8. What is a lever? 9. Define equilibrium in sports. 10. What is the centre of gravity of a body? 11. What is friction? Give one example from sports. 12. What is projectile motion in sports? Level 2: Intermediate Questions 2–3 marks each Understanding and application 13. Differentiate between a test, measurement, and evaluation with suitable examples. 14. Explain any three components of the SAI Khelo India Fitness Test for students aged 9–18 years. 15. Explain the procedure and purpose of the Harvard Step Test. 16. Describe any three tests included in the Rikli and Jones Senior Citizen Fitness Test and state what each measures. 17. Explain the importance of the Johnson–Metheny Test of Motor Educability.

18. Explain Newton's Second Law of Motion with two examples from sports.
19. Differentiate between static equilibrium and dynamic equilibrium with suitable examples.
20. Explain the three classes of levers with one sporting example of each.
21. Describe the role of friction in sports, giving two examples where it is beneficial.
22. Explain Newton's Third Law of Motion with suitable examples from athletics or swimming.
23. Explain any three factors that affect the trajectory of a projectile in sports.
24. Describe how biomechanics helps athletes improve performance and reduce the risk of injury.

Level 3: Advanced Questions

5 marks each | Detailed answers, calculations and case studies

25. Explain the SAI Khelo India Fitness Test for students aged 9–18 years. Describe the tests used to assess speed, endurance, flexibility, strength, and body composition.
26. Explain the Harvard Step Test and write its fitness index formula. Calculate the fitness index of a student who exercises for 300 seconds and has a pulse count of 90 during the specified recovery period.
27. Describe the six components of the Rikli and Jones Senior Citizen Fitness Test. Explain how each test assesses a different aspect of functional fitness.
28. Explain the meaning of BMR and discuss the factors that influence an individual's basal metabolic rate. Describe how BMR measurement is useful in understanding energy requirements.
29. Explain Newton's three laws of motion and discuss their applications in different sports, using suitable examples for each law.
30. Describe the three classes of levers with their fulcrum, effort, and resistance positions. Explain how these levers operate in human movement with sporting examples.
31. Explain static and dynamic equilibrium. Discuss the role of the centre of gravity and base of support in maintaining balance during gymnastics, wrestling, or other sports.
32. Explain projectile motion in sports. Discuss how the angle of release, speed of release, and height of release influence the trajectory of a thrown or kicked object.
33. Discuss the importance of friction in sports. Explain how athletes and sports equipment use friction to improve performance, and describe situations in which excessive friction can be disadvantageous.
34. A student scores poorly in the 50-metre speed test, sit-and-reach test, and partial curl-up test. Identify the fitness components being assessed and suggest suitable activities to improve each component.
35. A long jumper adjusts the angle of take-off, increases running speed before take-off, and changes body position during flight. Analyse these actions using the principles of projectile motion and Newton's laws of motion.
36. **Case study:** During a school sports assessment, a student performs the Harvard Step Test, completes the sit-and-reach test, and participates in a standing long jump. The physical education teacher then explains how the student's jumping technique can be improved by applying biomechanical principles.
Answer the following:
 - (a) What does the Harvard Step Test measure?
 - (b) Which component of fitness is assessed by the sit-and-reach test?
 - (c) Explain how Newton's Third Law applies during the take-off phase of the standing long jump.
 - (d) Explain how the angle of take-off can influence the distance achieved in the long jump.

7. APPLIED MATHS

- Q1. Evaluate: $\int 5^{2 \log_5 x} dx$
- Q2. Evaluate: $\int \frac{x^6+1}{x^2+1} dx$.
- Q3. Evaluate: $\int \frac{3e^x - 5e^{-x}}{4e^x + 5e^{-x}} dx$.

	Q4. Evaluate: $\int \frac{x^{\frac{1}{2}}}{1+x^4} dx$ Q5. Evaluate: $\int \frac{dx}{e^{2x}+1}$. Q6. Evaluate: $\int \frac{\sqrt{x}}{\sqrt{x^3-a^3}} dx$. Q7. If $\int_a^b x^3 dx = 0$ and $\int_a^b x^2 dx = \frac{2}{3}$, then find the value of a and b. Q8. Evaluate: $\int e^x \left(\frac{1-x}{1+x^2} \right)^2 dx$ Q9. Find $\int \frac{2x-1}{(x-1)(x+2)(x-3)} dx$ Q10 Evalaute: $\int e^{\tan^{-1} x} \left(\frac{1+x+x^2}{1+x^2} \right) dx$ Q11. Evalaute: $\int_0^1 x \log(1+2x) dx$. Q12. Find $\int \frac{2x}{(x-1)(x+2)} dx$ Q13. Evalaute: $\int_0^1 \frac{x^3}{(1+x^2)^4} dx$ Q14. Find the area of the region enclosed by the parabola $y^2 = 4ax$ and the chord $y = mx$. Q15. Sketch the graph of $y = x + 4$. Using integration, find the area of the region under the curve $y = x + 4$. above the x - axis and between $x = -6$ and $x = 0$. Q16. The marginal revenue function of a commodity is $MR = 7 - \frac{6}{(x+2)^2}$ Find the revenue function. Also, find the revenue obtained on selling 4 units of the product. Q17. A company has approximated the marginal cost and marginal revenue functions for one of its products by $MC = 81 - 16x + x^2$ and $MR = 20 - 2x^2$ respectively. Determine the profit maximizing output and the total profit at the optimum output, assuming fixed cost as zero. Q18. The supply function of a product is $p = 0.4 e^{2x}$, where x denotes 1000 units. Find producer's surplus when sales are 2000 units. (Given $e^4 = 54.6$) Q19. Find the consumer's surplus and producer's surplus under pure competition for demand function $p = \frac{8}{x+1} - 2$ and supply function $p = \frac{1}{2}(x+3)$, where p is the price and x is quantity. Q20. Determine the order and the degree (when defined) of each of the following differential equation: $\sqrt{1 + \left(\frac{dy}{dx}\right)^2} = 3x - \frac{dy}{dx}$. Q21. Show that $y = e^{-x} + ax + b$ is a solution of the differential equation $e^x \frac{d^2y}{dx^2} = 1$. Q22. Show that the function $y = ax + 2a^2$ is a solution of the differential equation $2\left(\frac{dy}{dx}\right)^2 + x \frac{dy}{dx} - y = 0$. Q23. Verify that $y = ce^{-x^3}$ is the solution of the differential equation $\frac{dy}{dx} + 3x^2y = 0$ Also, determine the solution curve of the given differential equation that passes through the point (0, 5). Q24. Form the differential equation of the family of straight lines $y = mx$, where m is arbitrary constant. Q25. Solve the differential Equations: $y(1-x^2) \frac{dy}{dx} = x(1+y^2)$.
8.	MARKETING Level 1 – Easy 10 questions Section A – 2 marks each Q1. Define promotion and state one objective of promotion. (2) Q2. What is advertising? Give one example. (2) Q3. Define digital marketing and mention one digital marketing channel. (2) Q4. What is green marketing? Give one example. (2) Section B – 3 marks each Q5. Explain any three elements of the promotion mix. (3) Q6. State any three advantages of e-commerce for customers. (3) Q7. What is sales promotion? Explain any two sales promotion techniques with examples. (3) Section C – 4 marks each

Q8. Differentiate between advertising and personal selling on any four bases. (4)

Q9. Explain any four benefits of digital marketing for businesses. (4)

Q10. What is influencer marketing? Explain any three ways in which it helps businesses promote their products. (4)

Level 2 – Medium

10 questions

Section A – 2 marks each

Q11. Distinguish between advertising and publicity on any two bases. (2)

Q12. State any two limitations of digital marketing. (2)

Q13. Explain the meaning of mobile marketing and give one example. (2)

Section B – 3 marks each

Q14. Explain any three factors that a business should consider while selecting a suitable promotional mix. (3)

Q15. Differentiate between traditional marketing and digital marketing on any three bases. (3)

Q16. Explain any three advantages of green marketing for a business. (3)

Q17. How does e-commerce help businesses expand their market reach? Explain any three points. (3)

Section C – 4 marks each

Q18. A company launches a new energy drink. It advertises on television, offers introductory discounts, appoints sales representatives and issues press releases about its product.

Identify the four promotional tools used by the company and explain the role of each. (4)

Q19. A clothing brand promotes its products through social media advertisements and influencers. However, online engagement is high but actual sales remain low.

Suggest any four measures the company can take to improve the effectiveness of its digital marketing strategy. (4)

Q20. Explain any four challenges faced by businesses while adopting e-commerce. (4)

Level 3 – Difficult

10 questions

Section A – 2 marks each

Q21. Why is personal selling particularly useful for products that require technical explanation? Give two reasons. (2)

Q22. A company claims that its packaging is environmentally friendly but has no evidence to support the claim. Identify the marketing concern involved and explain its meaning. (2)

Q23. Why is measuring conversion rates important in digital marketing? State two reasons. (2)

Section B – 3 marks each

Q24. A company has a limited promotional budget and wants to reach young customers in different cities. Recommend a suitable promotional approach and justify your recommendation with three points. (3)

Q25. Explain three ways in which customer reviews and ratings can influence online purchasing decisions. (3)

Q26. A business sells reusable water bottles but uses excessive non-recyclable packaging and makes unsupported environmental claims.

Identify three problems in its green marketing strategy and suggest suitable improvements. (3)

Q27. Explain any three ethical or privacy-related concerns associated with digital marketing. (3)

Section C – 4 marks each

Q28. Case Study – Promotion

NutriBite introduces healthy snacks for school and college students. It uses social media campaigns, free product samples, influencer collaborations and personal selling to retailers. After two months, the company finds that many people know about the product, but repeat purchases are low.

Answer the following:

a. Identify any two promotional tools used by NutriBite. (2)

- b. Suggest two measures the company can take to encourage repeat purchases. (2)

Q29. Case Study – Emerging Trends in Marketing

EcoHome sells energy-efficient appliances through its website. It uses targeted digital advertisements, customer reviews and recyclable packaging. However, some customers hesitate to purchase because they are concerned about online payment security and the authenticity of the company's environmental claims.

Answer the following:

- a. Identify two emerging marketing practices used by EcoHome. (2)
b. Suggest two measures to address the customers' concerns. (2)

Q30. Application-Based Question

A traditional furniture retailer wants to expand its business by adopting e-commerce, social media marketing and sustainable business practices.

Prepare a brief marketing plan explaining:

- a. One way to use e-commerce to increase sales. (1)
b. One way to use social media marketing to attract customers. (1)
c. Two ways to incorporate green marketing into its operations. (2)