



# DELHI PUBLIC SCHOOL VISAKHAPATNAM ASSIGNMENT



April – May 2026

Class: XII Commerce

Date of Submission: on or before 15.06.2026

Subject: ENGLISH

## 1. Formal Invitation (Card Format)

Purpose: Sent to a large group for events like weddings, annual days, or inaugurations.

Key Rule: Written in the third person. No signatures. Put it in a box.

Format

- Name of the Host(s)
- Standard phrase (e.g., "request the pleasure of your company")
- Purpose/Occasion of the invitation
- Date, Time, and Venue
- RSVP (Bottom left: contact details)

Example

**The Principal, Staff, and Students  
of  
Sunshine Public School, Delhi**  
cordially invite you to  
the **ANNUAL SPORTS DAY**  
on Saturday, 25th October 2026  
at 10:00 AM in the school playground.  
**Shri Kiren Rijiju, Minister of Sports,**  
has kindly consented to be the Chief Guest.  
**RSVP** Principal 011-2345XXXX

Practice Question: Draft a formal invitation card for the inauguration of your new boutique, 'Style & Smile', at GK-II, New Delhi.

Invitation (Letter Format)

Purpose: Sent to an individual (e.g., a VIP or Chief Guest). Key Rule: Follows the standard Formal Letter format.

Format

- Sender's Address
- Date
- Receiver's Designation & Address
- Subject
- Salutation (Sir/Madam)
- Body (Occasion, Date, Time, Venue, and the specific request)
- Complimentary Close & Name

Example

Subject: Invitation as Chief Guest for Inter-School Debate.

Dear Sir,

Our school is organizing an Inter-School Debate Competition on 15th Nov 2026 at 11:00 AM. We would be honored if you could preside over the function as the Chief Guest and inspire our students.

Practice Question: Write a letter to a famous athlete inviting them to conduct a workshop at your sports academy.

## 3. Formal Acceptance

Key Rule: Use the third person. Acknowledge the invitation and confirm attendance. Put it in a box.

Example

Address

Mr. and Mrs. Khanna thank the Principal and Staff of Sunshine Public School for their kind invitation to the Annual Sports Day on 25th Oct 2026 and are delighted to accept the same. They will be attending the function.

Practice Question: You are Dr. Amit Gupta. Write a formal acceptance to an invitation to speak at a medical seminar.

#### 4. Formal Refusal/Rejection

Key Rule: State a specific reason for inability to attend (e.g., prior engagement).

Example

Address

Mr. and Mrs. Khanna thank the Principal and Staff of Sunshine Public School for their kind invitation to the Annual Sports Day on 25th Oct 2026 but regret their inability to attend due to a prior engagement. They convey their best wishes for the success of the event.

Practice Question: You have been invited to judge a talent show at a local club. Write a formal refusal citing your busy schedule.

#### 5. Long Writing Tasks

##### A. Report Writing

- Format: Headline, By-line (Name & Designation), Date & Place (for newspapers).
- Style: Past tense, passive voice, factual.

Practice Question: You are Rohan/Rita, a reporter for 'The Times'. Write a report on the 'Cleanliness Drive' organized in your colony.

##### B. Article Writing

- Format: Heading (Catchy), By-line.
- Style: 3-4 Paragraphs (Introduction, Analysis/Causes, Solutions/Conclusion).

Practice Question: Write an article in 120-150 words on 'The Impact of Social Media on Teenagers' Mental Health'.

##### C. Letter to the Editor

- Format: Standard Formal Letter format.
- Crucial Phrase: "Through the columns of your esteemed newspaper, I wish to draw the attention of the concerned authorities towards..."

Practice Question: Write a letter to the Editor of 'The Daily Mirror' highlighting the problem of frequent power cuts in your locality during board exams.

#### Literature

1. Complete reading and learning the required vocabulary from the VISTAS textbook and write brief notes on all the characters. ( develop these oneliners – give examples to illustrate the character traits being discussed 80-100 words))

##### 1. The Third Level (Jack Finney)

- Charley: The 31-year-old protagonist who claims to have found a third level at Grand Central Station.
- Louisa: Charley's wife, who is worried about his mental health.
- Sam Weiner: Charley's psychiatrist friend who eventually disappears into the "third level" himself.

##### 2. The Tiger King (Kalki)

- The Maharaja of Pratibandapuram (Jilani Jung Jung Bahadur): The eccentric protagonist obsessed with killing a hundred tigers to defy a prophecy.
- The Crown Prince: The Maharaja as a child.
- The Chief Astrologer: The man who predicted the King's death by a tiger.
- The Dewan: The King's chief administrative officer who helps him find tigers (and a wife).
- The British Officer: A high-ranking official whose desire to hunt tigers nearly costs the King his kingdom.
- The British Officer's Wife (Duraiani): Greedy and fond of diamond rings, she accepts 50 rings from the King as a bribe.

##### 3. Journey to the End of the Earth (Tishani Doshi)

- Tishani Doshi: The narrator and author.
- Geoff Green: The founder of the "Students on Ice" programme.

##### 4. The Enemy (Pearl S. Buck)

- Dr. Sadao Hoki: A skilled Japanese surgeon torn between national loyalty and his Hippocratic Oath.

- Hana: Sadao's supportive and graceful wife.
  - Tom: The wounded American Prisoner of War (POW) saved by Sadao.
  - The General (Takima): A high-ranking, selfish Japanese official who needs Sadao for his own medical care.
  - The Servants (Yumi, the Gardener, and the Cook): They represent the traditional, nationalist view and disapprove of sheltering the enemy.
5. On the Face of It (Susan Hill)
- Derry (Derek): A 14-year-old boy with a face scarred by acid, leading to deep insecurity and isolation.
  - Mr. Lamb: An elderly man with a tin leg who tries to teach Derry to look at the world with optimism.
  - Derry's Mother: A protective but somewhat overbearing figure.
6. Memories of Childhood (Zitkala-Sa & Bama)
- I. The Cutting of My Long Hair
- Zitkala-Sa: The narrator, a Native American girl struggling against the forced assimilation of her culture.
  - Judewin: A friend who warns Zitkala-Sa about the hair-cutting.
  - The Pale-Faced Woman: A teacher/authority figure at the school.
- II. We Too Are Human Beings
- Bama: The narrator, a young Tamil Dalit girl who discovers the reality of untouchability.
  - Annand (Annan): Bama's elder brother who encourages her to study hard to gain respect.
  - The Elder: A man from Bama's community who has to carry food in a specific way to avoid "polluting" the upper-caste landlord.
  - The Landlord: An upper-caste man who observes the "untouchables" from a distance.

### **Subject: ACCOUNTANCY**

- Amit, Sumit and Pulkit were partners sharing profit and loss in the ratio of 5:3:2. Their Capitals were ₹8,00,000; ₹7,00,000 and ₹5,00,000 respectively. According to Partnership Deed:
  - Interest on Capital @ 10% p.a.
  - Salary to Amit ₹10,000 p.m. and Pulkit ₹15,000 per quarter.
  - Commission to Sumit ₹70,000.
  - Sumit was being guaranteed that his share of profits will not be less than ₹65,000. Deficiency, if any, will be borne by Amit and Pulkit equally.
 Ignoring the above terms, the profit of ₹6,00,000 for the year ended March 31, 2025 was divided equally between partners. You are required to pass necessary adjustment entry. Show your workings clearly.
- Jay, Vijay and Karan were partners of an architect firm sharing profits in the ratio of 2:2:1. Their partnership Deed provided the following:
  - A monthly salary of ₹15,000 each to Jay and Vijay.
  - Karan was guaranteed a profit ₹5,00,000 and Jay guaranteed that he will earn a annual fee of ₹2,00,000. Any deficiency arising because of guarantee to Karan will be borne by Jay and Vijay in the ratio of 3:2.
 During the year ended 31<sup>st</sup> March, 2018, Jay earned fee of ₹1,75,000 and the profits of the firm amounted to ₹15,00,000. Showing your workings clearly prepare Profit & Loss Appropriation Account and the Capital Accounts of Jay, Vijay and Karan for the year ended 31<sup>st</sup> March, 2018.
- The capitals of X, Y and Z as on 31<sup>st</sup> March, 2026 were 1,50,000, 5,50,000 and 11,00,000 respectively. Divisible profit for the year ended 31<sup>st</sup> March, 2026 ₹3,00,000 was distributed in the ratio of 4:1:1 after allowing interest on capital @10% p.a. During the year, each partner withdrew ₹50,000 per month in the beginning of each month. The Partnership Deed did not specify the profit-sharing ratio and interest on drawings but allowed interest on capital @ 12% p.a. Showing your workings, pass the necessary adjustment entry to rectify the above error.
- Manoj and Nitin were partners in a firm sharing profits and losses in the ratio of 2:1. On 31<sup>st</sup> March, 2023, the balances in their capital accounts after making adjustments for profit and drawings were ₹90,000 and ₹80,000 respectively. The net profit for the year ended 31<sup>st</sup> March, 2023 amounted to ₹30,000. During the year Manoj withdrew ₹40,000 and Nitin withdrew

- ₹20,000. Subsequently, it was noticed that Interest on Capital @ 10% p.a. was not provided to the partners. Also, Interest on Drawings to Manoj ₹3,000 and to Nitin ₹2,000 was not charged. Pass necessary adjusting Journal entry. Show your workings clearly.
5. X and Y are partners sharing profits in the ratio of 3:2. On 31<sup>st</sup> March, 2026 after closing the books of account, their capitals are ₹10,00,000 and ₹12,50,000 respectively. On 1<sup>st</sup> May, 2025, X had introduced an additional capital of ₹2,50,000 and Y withdrew ₹1,25,000 from his capital. On 1<sup>st</sup> October, 2025, X withdrew ₹5,00,000 from his capital and Y introduced ₹6,25,000. After closing the accounts, it was noticed that Interest on Capital @ 6% p.a. has been omitted. During the year ended 31<sup>st</sup> March, 2026, X's drawings and Y's drawings were ₹2,50,000 and ₹1,25,000. Profits (before interest on capital) during the year were ₹5,00,000. Calculate Interest on Capital if the capitals are (a) fixed, and (b) fluctuating.
6. A, B and C are partners in a firm sharing profits in the ratio of 2:2:1. Their fixed capitals are ₹1,00,000; ₹80,000 and ₹70,000 respectively. For the year ended 31<sup>st</sup> March, 2026, interest on capital was credited @9% p.a. instead of 12% p.a. Give the adjustment Journal entry.
7. P and Q were partners in a firm sharing profits equally. Their fixed capitals were 1,00,000 and 50,000 respectively. The Partnership Deed provided for Interest on Capital at the rate of 10% per annum. For the year ended 31<sup>st</sup> March, 2026, profits of the firm were distributed without providing Interest on Capital. Pass necessary adjustment entry to rectify the error.
8. Calculate the amount of Pawan's monthly drawings for the year ended 31<sup>st</sup> March, 2026 in the following cases when interest on drawings is charged @10% p.a.:
- When interest on drawings is ₹1,300 and he withdrew a uniform amount in the beginning of each month.
  - When interest on drawings is ₹1,100 and he withdrew a uniform amount at the end of every month.
  - When interest on drawings is ₹1,200 and he withdrew a uniform amount in the middle of each month.
9. Arun and Barun were partners in a firm sharing profits in the ratio of 5:3. Their fixed capitals on 1<sup>st</sup> April, 2025 were: Arun ₹6,00,000 and Barun ₹8,00,000. They agreed to allow interest on capital @12% p.a. and to charge on drawings @15% p.a. Profit before Interest on Capital for the year ended 31<sup>st</sup> March, 2026 was ₹1,26,000. Drawings by Arun were ₹20,000 and by Barun ₹40,000 during the year. Interest on capital is to be allowed even if the firm incurs loss. Partnership Deed provides for allowing salary to partners of ₹1,20,000 each. Prepare Profit & Loss Appropriation Account showing the calculations.
10. A and B are partners sharing profits equally. Their capitals as on 1<sup>st</sup> April, 2025 were ₹5,00,000 each. Partners are allowed interest on capital @5% p.a. Drawings of each partner were ₹1,00,000. Salary is to be allowed to B @ ₹5,000 per month. Net Profit for the year ended 31<sup>st</sup> March, 2026 was ₹8,80,000. 10% of the net divisible profit is to be set aside to General Reserve. Prepare Profit & Loss Appropriation Account for the year ended 31<sup>st</sup> March, 2026.
11. Charu and Damini are partners in a business and their capitals at the end of the year were ₹7,00,000 and ₹6,00,000 respectively. Calculate their opening capitals from the following information:
- Drawings of Charu and Damini for the year were ₹75,000 and ₹50,000 respectively.
  - Damini introduced capital of ₹1,00,000 during the year.
  - Interest on capital credited to the Capital Accounts of Charu and Damini were ₹15,000 and ₹10,000 respectively.
  - Interest on drawings debited to the Capital Accounts of Charu and Damini were ₹7,500 and ₹5,000 respectively.
  - Share of loss debited to Capital Account of each Partner was ₹20,000.
12. Ananya and Manju are partners with capitals as at 1<sup>st</sup> April, 2025 of ₹5,00,000 each. On 1<sup>st</sup> April, 2025, firm gave loan of ₹1,00,000 to Ananya. The firm closes its books of account on 31<sup>st</sup> March every year. Pass the Journal entries for interest on loan in each of the following cases:

- (i) When the Partnership Deed does not provide for charging interest on loan to partner.
- (ii) When the Partnership Deed does not provide for charging interest on loan to partner but rate of interest is agreed at 10% p.a.
- (iii) When the Partnership Deed provides for charging interest on loan to partner @ 12% p.a.
- (iv) When the Partnership Deed provides for charging interest on loan to partner @12% p.a. or the rate of interest charged by the bank on its loan, whichever is higher. Its bank charges interest @ 15% p.a.

**Subject: BUSSINESS STUDIES**

1. Mita has a successful ice cream business at Bikaner, namely 'Smartflavours'. Her ice creams are utterly delicious. She makes ice creams from fresh milk and the same are available in a wide range of flavours and packs. She sets viable business objectives and works with the same in mind in order to ensure that the customers will come back for purchasing. Having the first mover advantage, her business was doing well. To earn higher profits, she started cutting down costs. This would sometimes lead to delay in delivery and the ice cream was not reaching the market in time. Over a period of time, the demand for her ice cream declined and because of it the competitors entered the market. She lost some of her market share to competitors. At the beginning of summer season, she got back to back orders for supply of 4,000 ice cream packs of different flavours for special occasions. To ensure that the task was completed and orders delivered in time she hired additional workers. She was, thus able to produce and deliver the ice cream packs but at a high production cost.  
While completing activities and finishing the given task for achieving goals, Mita realized she was ignoring one of the important aspects of management. Identify the aspect of management that has been ignored by Mita.  
Also explain the same with the help of an example.
2. Forex Ltd. is a private limited company with several branches all over India. It promotes the sales of Indian handloom and handicraft products while providing equitable employment to traditional artisans. Mr. Brijesh, a branch manager of the company plans his winter collection in the month of June itself. He has to ensure that there is adequate workforce and continuously monitor whether production is proceeding according to plans. He also provides direction and motivation to his employees. The purchase, production and sales departmental efforts are coordinated by Mr. Brijesh for achieving organizational objectives harmoniously. The production and the sales department coordinate their work, so that production takes place according to the demand in the market. The purchase department is responsible for producing material. This then becomes the basis of the activities of the production department and finally sales can take place.
  - (a) Identify any three functions of management performed by Mr. Brijesh in Forex Ltd. by quoting lines from the above case.
  - (b) Identify and explain any two features of coordination discussed in the above case.
3. Kamal, Khan and David are partners in a firm engaged in the distribution of dairy products in Madhya Pradesh. Kamal is a holder of Senior Secondary School Certificate from Central Board of Secondary Education with Business Studies as one of his elective subjects. Khan had done his post-graduation in Hindi literature and David in Dairy Farming. One day there was a serious discussion between Khan and David regarding the nature of Management as a Science. Khan argued that Management is not a science whereas David was of the opinion that management is a science. Kamal intervened and corrected both Khan and David about the nature of Management as a Science with the help of his Knowledge of Business Studies.  
Explain, how Kamal would have been able to satisfy both Khan and David.
4. Das is the Managing Director of 'Gamut Ltd.,' manufacturing different varieties of cheese. He has been efficient team working under him consisting of Rajat, the Production manager, Vinay- the Marketing Manager and Adit- the Finance manager. They understand and interpret the policies made by Das, ensure that their departments have adequate manpower, assign them the necessary duties and motivate them to achieve the desired objectives.  
State one more function other than those mentioned above, that this team may perform at the level they are working.

5. Name the process of designing and maintaining an environment in which individuals working together in groups efficiently accomplish selected aims. Also, explain its importance by giving any five points.
6. Sanchit, after completing his entrepreneurship course from Sweden returned to India and started a coffee shop „Aroma Coffee Can“ in a famous mall in New Delhi. The specialty of the coffee shop was the special aroma of coffee and a wide variety of flavours to choose from. Somehow, the business was neither profitable nor popular. Sanchit was keen to find out the reason. He appointed Sandhya, an MBA from a reputed college, as a Manager to find out the causes for the same. Sandhya took feedback from the clients and found out that though they loved the special unique aroma of coffee but were not happy with the long waiting time being taken to process the order. She analysed and found out that there were many unnecessary obstructions in between which could be eliminated. She fixed a standard time for processing the order. She also realised that there were some flavours whose demand was not enough. So, she also decided to stop the sale of such flavours. As a result within a short period Sandhya was able to attract the customers. Identify and explain any two techniques of scientific management used by Sandhya to solve the problem.
7. Neeraj is selected for the post of a software developer in an IT Company. On the first day of his joining Mehul, his project manager tells Neeraj that during the course of his work he will come across many such opportunities which may tempt him to misuse his powers for individual or family's benefit at the cost of larger general interest of the company. In such situations, he should rather exhibit exemplary behaviour as it will raise his stature in the eyes of the company. Also, for interacting with anyone in the company on official matters, he should adopt the formal chain of authority and communication. However, in case of emergency he can use the exceptions as provided by Henry Fayol In context of the above case:
  - a. Identify and explain the various principles of management that Mehul is advising Neeraj to follow while doing his job.
  - b. Identify and explain the exception referred here
8. Hritik is desirous of setting up a small factory to manufacture different kinds of eco friendly packaging materials. He proposes to adopt a logical approach to his business rather than hit and trial method as he knows that this can result in tremendous saving of human energy as well as wastage of time and materials. He plans to adopt paternalistic style of management in practice in order to avoid any kind of class conflict that may emerge between him and the workers. Moreover, he plans to seek the opinion of his workers before taking any important decisions and also offers incentives to them for providing valuable suggestions for the business. In context of the above case: Identify and explain the various principle of scientific management that Hritik plans to apply in his business.
9. Suresh works in a bulb manufacturing company. Each bulb which is manufactured is of standard size and quality. Further if there is any un required type of bulb manufactured then its production is stopped. Last month when the company came to know that 10-watt bulbs were no more liked by customers, their production was stopped. He works in the purchase department. His job is to purchase the filaments required to make bulbs. This time when he purchases the filament, he gets the instruction from the seller that some special care needs to be taken in the first hour of fixing the filaments inside the bulb. Suresh knows this information should be given immediately to the production department before the assembling process starts. However, he finds that his company's policies only allow him to give the message to his immediate boss who will further pass this message to his boss. The passing of this message will continue till it reaches the desired person in the production department.
  - a. Which technique of management is followed here?
  - b. Also name the principle of management followed here by the company.
  - c. Which option is now available to Suresh since the company is not allowing him to interact with the concerned worker in the production department?

**Subject: Economics**

1. Which of the following statement is correct?
  - a)  $NDP_{MP} = NDP_{FC} - NFIA$
  - b)  $NNP_{FC} = NDP_{FC} + NFIA$
  - c)  $GDP_{FC} = GDP_{MP} + NIT$
  - d)  $GDP_{MP} = NDP_{FC} + \text{Consumption of fixed capital}$

2. If nominal GDP = ₹4000 and real GDP = ₹5000, GDP deflator in percentage is \_\_\_\_\_.
3. Net factor income from abroad is positive when
4. . Explain the concept of circular flow of income.
5. How does rise in sale of petrol impact GDP and Welfare?
6. Explain the concept of Real GDP and Nominal GDP using a suitable numerical example.
7. In the estimation of a country's National income, are the following items included?
  - a. Purchase of refrigerator by a firm for own use
  - b. Expenditure on engine oil by car service station
  - c. Payment made by a Japanese tourist for goods purchased in India
  - d. Expenditure on old age pension by government
  - e. Purchase of taxi by a taxi driver
8. Case study based MCQ

Since in a monetary economy, all payments are made in money, the real flow turns itself into money flow of income. When firms get factor services from households, they make monetary payments against these services to the households. These payments are made in the form of wages to workers, rent to land owners, interest to capitalists, and profit to entrepreneurs. These monetary payments are factor incomes for households. Households spend these incomes on the purchase of goods and services from the firms for their consumption. As the households spend all their income on consumption of goods and services, total money receipts of the firms is the same as the total income of the households. In other words, the money delivered to the households by the firms as factor payments comes back to them when households spend their income on consumption.

- i) National income is a \_\_\_\_\_ concept.
    - a) Stock b) Flow c) Both (a) and (b) d) Neither (a) nor (b)
  - ii) The non-stop continuity of inter-sectoral flows is called
    - a) Real flows b) Money flows c) Physical flows d) Circular flows
  - iii) Distinguish between Factor payment and Transfer payment.
- .
9. Calculate  $GNP_{FC}$  from the following data by a) Income method and b) Expenditure method.

<u>Particulars</u>	<u>₹ in (crores)</u>
Private final consumption expenditure	1,000
Net domestic capital formation	200
Profits	400
Compensation of employees	800
Rent	250
Government final consumption expenditure	500
Consumption of fixed capital	60
Interest	150
Net current transfer rest of the world	(-80)
Net factor income from abroad	(-10)
Net export	(-20)
Net indirect taxes	80

10. From the following data, calculate  $GDP_{fc}$

<u>Items</u>	<u>(in crores)</u>
Sales	300
Opening stock	40
Maintenance of capital goods	30
Intermediate consumption	120
Exports	50
Inventory investment	20
Subsidies	10

11. During colonial period, India's demographic profile showed
  - a) High birth rate b) Low death rate c) High infant mortality rate d) Both (a) and (c)
12. State four principal factors which contributed to backwardness of Indian agriculture on the eve of independence.
13. State two-fold motive behind the systematic de-industrialization of Indian industries in the British era.

14. Explain the goals of planning as pursued in India.
15. Why was public sector given leading role in industrial development during the planning period?
16. What were the features of the IPR 1956?
17. What do you understand by the term 'Import substitution'? Explain the role of tariff and quota in India to achieve import substitution.

### Subject: MATHEMATICS

- 1-Let  $A = \mathbb{R} - \{2\}$  and  $B = \mathbb{R} - \{1\}$ . If  $f : A \rightarrow B$  is a mapping defined by  $f(x) = \frac{x-1}{x-2}$ , Show that  $f$  is bijective.
- 2-Prove that the relation  $R$  on  $\mathbb{Z}$ , defined by  $R = \{(x, y) : (x - y) \text{ is divisible by } 5\}$  is an equivalence relation.
- 3-Is the set of ordered pairs given at the end a function? If so, examine whether the mapping is injective or surjective.  $A = \{(x, y) : x \text{ is a person, } y \text{ is the mother of } x\}$ .
- 4-Evaluate  $\cos \left[ \cos^{-1} \left( \frac{-\sqrt{3}}{2} \right) + \frac{\pi}{6} \right]$
- 5-Evaluate:  $\sec^2 \left( \tan^{-1} \frac{1}{2} \right) + \operatorname{cosec}^2 \left( \cot^{-1} \frac{1}{3} \right)$
- 6- $\cos^{-1} \left( \frac{\sqrt{3}}{2} \right)$
- 7-If  $A = [a_{ij}]$  is a  $2 \times 2$  matrix such that  $a_{ij} = i + 2j$ , write  $A$ .
- 8-Let  $A = \begin{bmatrix} 1 & -1 & 0 \\ 2 & 1 & 3 \\ 1 & 2 & 1 \end{bmatrix}$  and  $B = \begin{bmatrix} 1 & 2 & 3 \\ 2 & 1 & 3 \\ 0 & 1 & 1 \end{bmatrix}$ . Find  $A^T$ ,  $B^T$  and verify that  $(A + B)^T = A^T + B^T$
- 9-Let  $A = \begin{bmatrix} 1 & -1 & 0 \\ 2 & 1 & 3 \\ 1 & 2 & 1 \end{bmatrix}$  and  $B = \begin{bmatrix} 1 & 2 & 3 \\ 2 & 1 & 3 \\ 0 & 1 & 1 \end{bmatrix}$ . Find  $A^T$ ,  $B^T$  and verify that  $(AB)^T = B^T A^T$
- 10-Find  $\frac{dy}{dx}$  for  $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$
- 11-Find  $\frac{dy}{dx}$ , when  $x = a \cos^2 \theta$ ,  $y = b \sin^2 \theta$ .
- 12-Find  $\frac{dy}{dx}$ , when:  $y \sec x + \tan x + x^2 y = 0$ .

### Subject: Artificial Intelligence

1. How does active listening contribute to effective communication?
2. Write one sentence of each type-statement, question and exclamatory.
3. What are the primary data structures in Pandas for handling structured data?
4. How can you import data from a CSV file into a Pandas Data Frame?
5. Discuss the differences between a Pandas Series and a Data Frame. Provide examples for the use these data structures and explain how they are related.

### Subject: Physical Education

- 1.Enlist the committees for organising sports events and explain any eight committees in detail.
- 2.What are Community Sports Programmes? Explain Health Run and Run for Unity in detail.
- 3.What is league tournament? Draw a fixture of 9teams on the basis of league tournament using cyclic method. Explain British method to declare winner.
- 4.Mention all calculations and steps involved to draw a knockout fixture of 19 teams, where 4teams are to be seeded