

LITTLE FAIRY PUBLIC SCHOOL

Summer Holidays Homework CLASS-XII (2026-27) COMMERCE

Holiday home work is an attempt to channelize your creative energy; it keeps you connected with the syllabus. This summer vacation, the Holiday Homework has been designed with the aim of activity-based learning. It includes assignments and activities that will foster curiosity, develop creativity, enhance knowledge, and instill the joy of learning. Doing it with the right spirit and enthusiasm will make it a great learning experience. Discover a new and better you who is enriched, confident, and performs every action with utmost perfection. It's the perfect time for strengthening family bonds, sharing festivities, joys and sorrows, and spending quality time together.

Take some time to focus on interesting books and read as much as you can about different places and people. Take good care of your health and hygiene. In this scorching heat, keep yourself well hydrated and energetic. Engage in morning walks, yoga, exercise, or meditation with your parents or grandparents. Revise all the work done in class. Ensure that your work is neat, presentable, and original, and conforms to the guidelines given for the homework as directed by the teachers.

ENGLISH:

PROJECT WORK: Instructions for Project File:

- The project must be handwritten and should be of 10-15 pages.
- It must include the following in proper sequence:
 1. Cover Page
 2. Certificate
 3. Acknowledgement
 4. Index
 5. Introduction
 6. Content with proper headings and subheadings
 7. Conclusion
 8. Bibliography
- The content should be written in simple and clear English.
- Students must include relevant examples, facts, and real-life references in the content.
- Maintain a neat presentation with proper margins and headings.
- You may add pictures, diagrams, or newspaper cuttings.
- Avoid copying directly from the internet; the work should be original.
- Follow all CBSE project guidelines.

TOPICS ARE AS FOLLOWS:

Roll No. 1–7	Topic: Impact of Social Media on Youth
Roll No. 8–14	Topic: Importance of English in Career Development
Roll No. 15–21	Topic: Mental Health Awareness among Students
Roll No. 22–28	Topic: Digital Education in Modern India
Roll No. 29–34	Topic: Environmental Issues and Sustainable Development
Roll No. 35–40	Topic: Value of Mother Tongue in Education

INSTRUCTIONS FOR MAKING THE PROJECT:

- The project must contain at least 20-25 sheets
- Use as many pictures/photographs as you require Use sketch pens for headings and coloured pens for content.
- Use A4 size coloured /designer paper sheets for the project and after compiling everything it should be submitted in spiral binding/Project file

NOTE: THE PROJECT SHOULD BE HANDWRITTEN

MATHEMATICS

(I) **PRACTICAL WORK:** Complete the given Lab Activities in the Practical File.

Activity -1 To verify that the relation R in the set L of all lines in a plane, defined by $R = \{(l, m) : l \perp m\}$ is symmetric but neither reflexive nor transitive.

Activity-2 To find analytically the limit of a function $f(x)$ at $x = c$ and to check the continuity of the function at that point.

Activity-3 To understand the concepts of decreasing and increasing functions. Page 3 of 14

Activity-4 To understand the concepts of local maxima, local minima and point of inflection.

Activity-5 To construct an open box of maximum volume from a given rectangular sheet by cutting equal squares from each corner.

(II) **ACTIVITY FILE:** (i) Make a chart of the formulae FORMULAE SHEET on A4 sheets.

(III) **CREATIVE WORK:** Draw MIND MAPS on A4 sheets chapterwise.

(IV) **WRITTEN ASSIGNMENT:** (i) Do NCERT textbook exercise based questions in Notebook, (ii) Solve EXEMPLAR questions and ASSIGNMENT WORKSHEET Questions in your Practice NB.

ECONOMICS:

PROJECT: Indian Economics.

This project is final CBSE project The expectations of the project work are that:

learners will complete only ONE project in each academic session project should be of 3,500-4,000 words excluding diagrams & graph hand-written it will be an independent, self-directed piece of study.

• It must include the following in proper sequence:

1. Cover Page
2. List of Contents
3. Certificate
4. Acknowledgement
5. Introduction of Topic
6. Relevance of Topic.
7. Conclusion
8. Case Study
9. Bibliography

Topics According to roll no.

Topics.	Roll no.
1. Government budget	1,3
2. Balance of payment	2,4,6
3. National income .	5,7,9
4. Money and banking	8,10,12
5. Determination of income and employment	11,13,15
6. Foreign exchange	14,16,18
7. Indian economy on the eve of independence	17,19,21
8. Indian economy in 1950- 1990	20,22,24
9. Liberalisation privatisation and globalisation	23,25,27
10. Human capital formation	26,28,30
11. Rural development	29,31,33
12. Employment growth. informalisation and other issue	32,34,36
13. Environment and sustainable development	35,37,39
14. Comparative development experience of India and its neighbouring countries.	38,40

BUSINESS STUDIES :

Prepare the project work on the topic allotted-

Project A : MARKETING MANAGEMENT
Project B :BUSINESS ENVIRONMENT
Project C :- STOCK EXCHANGE
Project D :- PRINCIPLES OF MANAGEMENT

Guidelines to be followed:-

Project A: MARKETING MANAGEMENT

(A.) On the basis of the work done by the students the project report should include the following:

1. Why have they selected this product/service?
2. Find out '5' competitive brands that exist in the market.
3. What permission and licenses would be required to make the product?
4. What are your competitors Unique Selling Proposition [U.S.P.]?
5. Does your product have any range give details?
6. What is the name of your product?
7. Enlist its features.
8. Draw the 'Label' of your product.
9. Draw a logo for your product.
10. Draft a tag line.
11. What is the selling price of your competitor's product?
 - (i) Selling price to consumer
 - (ii) Selling price to retailer
 - (iii) Selling price to wholesaler
- What is the profit margin in percentage to the a. Manufacturer.
 - b. Wholesaler.
 - c. Retailer.
12. How will your product be packed?
13. Which channel of distribution are you going to use? Give reasons for selection?
14. Decisions related to warehousing, state reasons.
15. 15. What is going to be your selling price?
 - (i) To consumer (ii) To retailer (iii) To wholesaler
16. List 5 ways of promoting your product.
17. Any schemes for
 - (i) The wholesaler (ii) The retailer (iii) The consumer
18. What is going to be your 'U.S.P'?
19. What means of transport you will use and why?
20. Draft a social message for your label.
21. What cost effective techniques will you follow for your product.
22. What cost effective techniques will you follow for your promotion plan.

At this stage the students will realize the importance of the concept of marketing mix and the necessary decision regarding the four P's of marketing.

A.PRODUCT B. PLACE C. PRICE D. PROMOTION

Project B: BUSINESS ENVIRONMENT

1. Changes witnessed over the last few years on mode of packaging and its economic impact. It may include the following changes:
 - a) The changes in transportation of fruits and vegetables such as cardboard crates being used in place of wooden crates, etc. Reasons for the above changes.
 - b) Milk being supplied in glass bottles, later in plastic bags and now in tetra pack and through vending machines.
 - c) Plastic furniture [doors and stools] gaining preference over wooden furniture.
 - d) The origin of cardboard and the various stages of changes and growth.
 - e) Brown paper bags packing to recycled paper bags to plastic bags and cloth bags.
 - f) Re use of packaging [bottles, jars and tins] to attract customers for their products.

- g) The concept of pyramid packaging for milk.
- h) Cost being borne by the consumer/manufacturer.
- i) Packaging used as means of advertisements.

2. The reasons behind changes in the following:

Coca – Cola and Fanta in the seventies to Thums up and Campa Cola in the eighties to Pepsi and Coke in nineties.

The teacher may guide the students to the times when India sold Coca Cola and Fanta were being manufactured in India by the foreign companies.

The students may be asked to enquire about

- a. Reasons of stopping the manufacturing of the above mentioned drinks in India THEN.
 - b. The introduction of Thums up and Campa cola range.
 - c. Re entry of Coke and introduction of Pepsi in the Indian market.
 - d. Factors responsible for the change.
 - e. Other linkages with the above.
 - f. Leading brands and the company having the highest market share.
 - g. Different local brands venturing in the Indian market.
 - h. The rating of the above brands in the market.
 - i. The survival and reasons of failure in competition with the international brands.
 - j. Other observations made by the students
3. Changing role of the women in the past 25 years relating to joint families, nuclear families, women as a bread earner of the family, changes in the requirement trend of mixers, washing machines, microwave and standard of living.
4. The changes in the pattern of import and export of different Products.
5. The trend in the changing interest rates and their effect on savings.
6. A study on child labour laws, its implementation and consequences.
7. The state of ‘anti plastic campaign,’ the law, its effects and implementation.
8. The laws of mining /setting up of industries, rules and regulations, licences required for running that business.
9. Social factors affecting acceptance and rejection of an identified product. (Dish washer, Atta maker,etc)
10. What has the effect been on the types of goods and services? The students can take examples like:
- a. Washing machines, micro waves, mixers and grinder.
 - b. Need for crèche, day care centre for young and old.
 - c. Ready to eat food, eating food outside, and tiffin centres.
11. Change in the man-machine ratio with technological advances resulting in change of cost structure.
12. Effect of changes in technological environment on the behaviour of employee.

Project C :- STOCK EXCHANGE

Project D: PRINCIPLES OF MANAGEMENT :

The students are required to visit any one of the following:

- 1. A departmental store.
- 2. An Industrial unit.
- 3. A fast food outlet.
- 4. Any other organisation approved by the teacher.

They are required to observe the application of the general Principles of management advocated by Fayol. Fayol’s principles are:

- 1. Division of work
- 2. Unity of command.
- 3. Unity of direction.
- 4. Scalar chain
- 5. Esprit de corps

6. Fair remuneration to all
7. . Order
8. Equity
9. Discipline
10. Subordination of individual interest to general interest.
11. Initiative.
12. Centralisation and decentralisation.
13. Stability of tenure. OR

They may enquire into the application of scientific management techniques by F.W. Taylor in the unit visited.

Scientific techniques of management.

1. Functional foremanship.
2. Standardization and simplification of work.
3. Method study.
4. Motion Study.
5. Time Study.
6. Fatigue Study
7. Differential piece rate plan.

(B.) PRESENTATION AND SUBMISSION OF PROJECT REPORT OF PROJECT A ,B AND C

The following essentials are required to be fulfilled for its preparation and submission.

1. The total length of the project will be of 25 to 30 pages.
2. The project should be handwritten.
3. The project should be presented in a neat folder.
4. The project report should be developed in the following sequenceb) The cover page should include the title of the Project, student information, school and year.
- c) List of contents.
- d) Acknowledgements and preface (acknowledging the institution, the places visited and the persons who have helped).
- e) Introduction.
- f) Topic with suitable heading.
- g) Planning and activities done during the project, if any.
- h) Observations and findings of the visit.
- i) Conclusions (summarised suggestions or findings, future scope of study).
- j) Photographs (if any).
- k) Appendix.
- l) Teacher's observation.
- m) Signature of the teacher.

Instructions:

1. The work has to be done on A4 size interleaf sheets.
2. It should be written in neat handwriting.
3. The file should not be spiraled.
4. The project should be hand written and no print-outs to be used for content writing

ACCOUNTANCY

Do in separate note book

Accounting for Partnership Firm:

Chapter 1. Fundamentals of partnership firm.

Theory aspects of the chapter. Meaning and contentment of partnership deed.

Assumptions of partnership deed Rights and duties of partners in a firm.

Minimum and Maximum limit of numbers of partners in a partnership firm.

Numerical

Do question no. 1 to 7 (page no. 1.101)

Question no. 9 to 12 (page no. 1.103)

Question no. 14 to 19 (page no. 1.104)

Question no. 24 to 27 (page no. 1.105)

Question no. 28 to 36 (page no1. 106 - 1. 108)

Question no. 37 to 45 (page no. 108 - 1.109)

Question no. 52, 54, 58, 59, (page no. 1.111)

Do all unsolved question of past adjustment (page no. 1.111 to 1.113) and guarantee of minimum profit to a partner.

Chapter 2

Nature and valuation of Goodwill. Theory aspects:

What is goodwill

Nature and methods of valuation of goodwill

Factors affecting goodwill

Need for valuation of goodwill As 26 of ICAI.

Numerical aspect. Do all the unsolved question (page no. 2.35 to 2.42)

INFORMATICS PRACTICES: Do the given assignment in your Informatics Practices notebook.

PHYSICAL EDUCATION:

(I) WRITTEN WORK: Prepare the Practical File (In the lab manual only)

In Practical File write the following three practicals in detail.

1. **Practical- 1:** Fitness tests administration. (SAI Khelo-India Test). SAI Khelo-India Fitness Test Battery: (Test name, objective/purpose, equipment required, procedure, scoring method, standard norms and the picture/diagram)

A. For the age category of 5 to 8 years old:

1. BMI
2. Flamingo balance test
3. Plate tapping test

B. For the age category of 9 to 18 years old:

1. BMI
2. Push-ups & Modified push-ups
3. Curl-ups & Partial curl-ups
4. 50m Dash
5. Sit and Reach test
6. 600m Run/walk

2. **Practical- 2:** Procedure for asanas, benefits & contraindications for any two asanas for each lifestyle diseases: Obesity, Diabetes, Hypertension, Asthma, Arthritis & lower back pain. (Total 10 asanas will be there, picture/diagram is mandatory for all asanas)

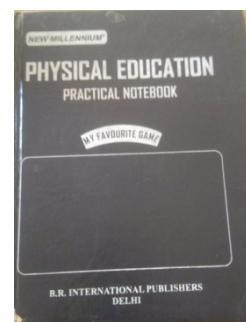
3. **Practical- 3:** Anyone IOA recognized Sport/Game of choice. Labelled diagram of Field & Equipment.

Mention the history, rules, terminologies, fundamental skills, scoring method, fouls, officials, International & Indian federation, and arjun awardee.

(Ex: Volleyball/Basketball/Football/Handball/Hockey/Cricket/Kabaddi/Kho-Kho/Archery/Badminton/Boxing/Chess/Swimming)

NOTE: Brown cover page, picture/diagram and index are mandatory.

2. Complete the subject copy (till chapter-2).



ASSIGNMENT SUBJECT: ENGLISH

Q1.) Write an article in 150–200 words on the topic: “How Technology is Changing Education”

You are Riya/Rohan of Class XII studying in your school. Discuss both the advantages and disadvantages of technology in students' lives.

Q2) Write an article in 150–200 words on: “Importance of Physical Fitness for Students”

Highlight the need for exercise, healthy habits, and balanced lifestyle among teenagers.

Q3) Your school organized a Tree Plantation Drive on World Environment Day. As the Cultural Secretary of your school, write a report in 120–150 words describing the event, participation of students, and its importance.

Q4) Your school recently celebrated its Annual Sports Day with great enthusiasm. Write a report in 120–150 words for your school magazine describing the main events and achievements of students.

Q5). In The Third Level, Jack Finney presents the modern world as full of stress, insecurity, and fear, while the past appears peaceful and comforting. Charley escapes into the “third level” because he is unable to cope with the pressures of modern life. Do you think escapism is a temporary relief or a permanent solution to problems? Critically analyse Charley’s experience and relate it to the way people today try to escape from stress and reality in their daily lives. (Answer in 150–200 words).

Q6) Answer the following questions in 30–40 words each:

- What do the young trees symbolize in Keeping Quiet?
- Why is the poet worried in My Mother at Sixty-Six?
- What was Franz expected to prepare for school in The Last Lesson?
- Why did M. Hamel wear his special dress?

Q7) Answer the following in 120–150 words each:

- What message does The Last Lesson convey about language and patriotism?
- Explain the theme of aging and fear of loss in My Mother at Sixty-Six.
- What does Keeping Quiet teach us about life?

Q8). Read the following extract from My Mother at Sixty-Six and answer the questions:

“Driving from my parent’s home to Cochin last Friday morning,
I saw my mother, beside me,
doze, open-mouthed, her face ashen like that
of a corpse...”

- Where is the poet going?
- What does “ashen like that of a corpse” signify?
- What feeling does the poet experience here?

Q9). Write the summary and theme of Lost Spring in 150–200 words.

Q10). Do any ONE of the following:

- Write a diary entry as Franz after the last lesson expressing his feelings.
- Prepare a speech on: Importance of Learning One’s Mother Tongue.

MATHEMATICS ASSIGNMENT WORKSHEET CH-3 MATRICES

Q1. If A and B are square matrices of same order, then which of the following statements is/are always true?

(i) $(A + B)(A - B) = A^2 - B^2$

(ii) $AB = BA$

(iii) $(A + B)^2 = A^2 + AB + BA + B^2$

(iv) $AB = 0 \implies A = 0 \text{ or } B = 0$

(a) Only (i) and (iii)

(b) Only (ii) and (iii)

(c) Only (iii)

(d) Only (iii) and (iv)

- Q2. If $A = \begin{bmatrix} 1 & a & b \\ -1 & 2 & c \\ 0 & 5 & 3 \end{bmatrix}$ is a symmetric matrix, then the value of $3a + b + c$ is:
 (a) 2 (b) 6 (c) 4 (d) 0
- Q3. If $A = \begin{bmatrix} \cos x & -\sin x \\ \sin x & \cos x \end{bmatrix}$ and $A + A' = I$, then the value of $x \in \left[0, \frac{\pi}{2}\right]$ is:
 (a) 0 (b) $\pi/4$ (c) $\pi/3$ (d) $\pi/2$
- Q4. If $A = \begin{bmatrix} \frac{1}{2}\cos x & -\sin x \\ \sin x & \frac{1}{2}\cos x \end{bmatrix}$ and $A + A' = I$, then the value of $x \in \left[-\frac{\pi}{2}, \frac{\pi}{2}\right]$ is:
 (a) $\pi/2$ (b) $\pi/3$ (c) 0 (d) $-\pi/2$
- Q5. Which of the following cannot be the order of a row matrix?
 (a) 2×1 (b) 1×2 (c) 1×1 (d) $1 \times n$
- Q6. Which of the following properties is/are true for two matrices of suitable orders?
 (i) $(A + B)' = A' + B'$ (ii) $(AB)' = A'B'$
 (iii) $(A - B)' = B' - A'$ (iv) $(kAB)' = kB'A'$
 (a) Only (i) (b) (i) (ii) and (iii) (c) (i) and (ii) (d) (i) and (iv)
- Q7. If A and B are skew symmetric matrices of same order, then which of the following matrices is also skew-symmetric?
 (a) AB (b) AB+BA (c) $(A + B)^2$ (d) $A - B$
- Q8. If A and B are skew symmetric matrices of same order, then $AB' + B'A$ is a/an:
 (a) Symmetric Matrix (b) Skew-symmetric Matrix (c) Null Matrix (d) Identity Matrix
- Q9. If a square matrix A is such that $A^2 = A$ and $(I - A)^3 = xA + I$, then value of x is equal to:
 (a) 7 (b) -7 (c) 5 (d) -1
- Q10. If A is a square matrix such that $A^2 = A$ then $(A - I)^3 - A$, is equal to:
 (a) I (b) A (c) -I (d) A^2
- Q11. For matrix $A = \begin{bmatrix} -p & q \\ r & p \end{bmatrix}$ is such that $A^2 = I$, then:
 (a) $1 + p^2 + qr = 0$ (b) $1 - p^2 - qr = 0$ (c) $1 - p^2 + qr = 0$ (d) $1 + p^2 - qr = 0$
- Q12. For any square matrix A with real entries, If $A + A'$ is a symmetric matrix then:
 (a) $(A - A')$ cannot be a skew symmetric matrix (c) $(A - A')$ is a skew symmetric matrix.
 (b) A is always a symmetric matrix (d) A is always a skew symmetric matrix.
- Q13. A matrix $B = [b_{ij}]_{m \times m}$ is said to be a diagonal matrix if:
 (a) $b_{ij} = 0$, when $i = j$. (b) $b_{ij} = 1$, when $i = j$.
 (c) $b_{ij} = 1$, when $i \neq j$. (d) $b_{ij} = 0$, when $i \neq j$.
- Q14. If $A = [a_{ij}]_{3 \times 3}$ is a scalar matrix then which of the following must be true?
 (a) A must be a symmetric matrix (b) A must be a skew symmetric matrix
 (b) A must be an Identity matrix (d) A must be a null matrix.
- Q15. Determine a matrix X such that $2A + 3B + X = O$, where $A = \begin{bmatrix} 7 & -2 \\ -5 & 4 \end{bmatrix}$ and $B = \begin{bmatrix} 3 & 2 \\ 1 & -5 \end{bmatrix}$.
- Q16. Find the value of $(b - a)^{c+d}$, if $\begin{bmatrix} 2a + b & a - 2b \\ 5c - d & 24 \end{bmatrix} = \begin{bmatrix} 4 & -3 \\ 11 & 4c + 3d \end{bmatrix}$.
- Q17. For $A = \begin{bmatrix} -2 & 1 \\ -1 & -1 \end{bmatrix}$, the sum of the diagonal elements in A^{12} is $m \times (9)^n$; $m, n \in N, m < n$. Then write the value of $(m + n)$.

- Q18. If $A = \begin{bmatrix} 2 & 0 & 1 \\ 2 & 1 & 3 \\ 1 & -1 & 0 \end{bmatrix}$, then compute $A^2 - 5A + 4I$.
- Q19. Find matrix A and B, if $A + B = \begin{bmatrix} 1 & 1 & -1 \\ 0 & 2 & 3 \\ -2 & 0 & -3 \end{bmatrix}$, $A + 2B = \begin{bmatrix} -1 & 1 & -1 \\ 4 & 0 & 5 \\ 2 & -2 & -3 \end{bmatrix}$.
- Q20. Express the matrix $\begin{bmatrix} 1 & 2 & 0 \\ -3 & 1 & 6 \\ 4 & -2 & 5 \end{bmatrix}$ as the sum of a symmetric and a skew symmetric matrix.
- Q21. Find the values of x,y,z if the matrix $A = \begin{bmatrix} 0 & 2y & z \\ x & y & -z \\ x & -y & z \end{bmatrix}$ satisfies the equation $A' = A^{-1}$.
- Q22. If $A = \begin{bmatrix} 0 & 6 & 7 \\ -6 & 0 & 8 \\ 7 & -8 & 0 \end{bmatrix}$, $B = \begin{bmatrix} 0 & 1 & 1 \\ 1 & 0 & 2 \\ 1 & 2 & 0 \end{bmatrix}$ and $C = \begin{bmatrix} 2 \\ 2 \\ 3 \end{bmatrix}$ then verify that $(A + B)C = AC + BC$.
- Q23. If $A = \begin{bmatrix} 3 & 1 \\ 7 & 5 \end{bmatrix}$, then find $(x + y)$ so that $A^2 - xI + yA = O$. Hence find A^{-1} .

ASSIGNMENT WORKSHEET CH-1 RELATIONS AND FUNCTIONS

- Q24. Show that the relation R on the set Z of all integers defined by $(x, y) \in R \Rightarrow (x - y)$ is divisible by 3 is
- Q25. Let N be the set of all natural numbers and let R be a relation on $N \times N$, defined by $(a, b) R (c, d) \Leftrightarrow ad = bc$ for all $(a, b), (c, d) \in N \times N$. Show that R is an equivalence relation. Also, find the equivalence class $[(2, 6)]$.
- Q26. Let N be the set of all natural numbers and let R be a relation on $N \times N$, defined by $(a, b) R (c, d) \Leftrightarrow ad(b + c) = bc(a + d)$ for all $(a, b), (c, d) \in N \times N$. Show that R is an equivalence relation. Also, find the equivalence class $[(2, 6)]$.
- Q27. Let R be the equivalence relation in the set $A = \{0, 1, 2, 3, 4, 5\}$ given by $R = \{(a, b) : 2 \text{ divides } (a - b)\}$. Write the equivalence class $[0]$.
- Q28. Let $A = [-1, 1]$. Then discuss whether the following functions defined on A are one-one onto or bijective.
 (a) $f(x) = \frac{x}{2}$ (b) $g(x) = |x|$ (c) $h(x) = x|x|$ (d) $k(x) = x^2$
- Q29. Let $A = \{1, 2, 3, \dots, 9\}$ and R be the relation in $A \times A$ defined by $(a, b) R (c, d)$ if $a + d = b + c$ for $(a, b), (c, d) \in A \times A$. Prove that R is an equivalence relation and also obtain the equivalence class $[(2, 5)]$ and $[(1, 3)]$.
- Q30. Check whether following functions are one-one onto or not?
- Q31.
- Q32. (i) $f(x) = \frac{x}{x^2 + 1}$, $f: R \rightarrow R$ (ii) $f(x) = \cos x$ (iii) $f(x) = 9x^2 + 6x - 5$, $f: R_+ \rightarrow [-5, \infty)$
- iv) $f(x) = 5x^2 + 6x - 9$, $f: R_+ \rightarrow [-9, \infty)$ (R_+ is the set of all non-negative real numbers)
- v) $f(x) = 4x^2 + 12x + 15$, $f: N \rightarrow S$ where S is the range of f
- Show that $f: N \rightarrow N$ given by $f(x) = \begin{cases} x+1, & \text{if } x \text{ is odd} \\ x-1, & \text{if } x \text{ is even} \end{cases}$ is both one-one and onto.
- Find the number of all one-one functions from set $A = \{a, b, c\}$ to itself.

MATHEMATICS :ASSIGNMENT WORKSHEET: CH-4 DETERMINANTS

Q1. For a square matrix A, $(3A)^{-1} = ?$

- (a) $3A^{-1}$ (b) $9A^{-1}$ (c) $\frac{1}{3}A^{-1}$ (d) $\frac{1}{9}A^{-1}$

Q2. If $\begin{vmatrix} -1 & -2 & 5 \\ -2 & a & -1 \\ 0 & 4 & 2a \end{vmatrix} = -86$, then the sum of all possible values of a is:

- (a) 4 (b) -4 (c) 5 (d) 9

Q3. If $\Delta_1 = \begin{vmatrix} 1 & 0 & 0 \\ 0 & 2 & 0 \\ 0 & 0 & 3 \end{vmatrix}$ and $\Delta_2 = \begin{vmatrix} 0 & 2 & 0 \\ 1 & 0 & 0 \\ 0 & 0 & 6 \end{vmatrix}$, then:

- (a) $\Delta_1 = 2\Delta_2$ (b) $\Delta_2 = -2\Delta_1$ (c) $\Delta_1 = \Delta_2$ (d) $\Delta_2 = -\Delta_1$

Q4. One of the values of x for which $\begin{vmatrix} \cos x & \sin x \\ -\cos x & \sin x \end{vmatrix} = 1$ is:

- (a) 0 (b) $\frac{\pi}{4}$ (c) $\frac{\pi}{3}$ (d) $\frac{\pi}{2}$

Q5. If $A^2 = 4A + 3I$ and $A^{-1} = xA + yI$, then the value of (x + y) is:

- (a) -1 (b) 1 (c) $\frac{5}{3}$ (d) 7

Q6. If $B(\text{adj } B) = \begin{bmatrix} 1/3 & 0 & 0 \\ 0 & 1/3 & 0 \\ 0 & 0 & 1/3 \end{bmatrix}$, then the value of $\det(B^{-1})$ is:

- (a) $1/3$ (b) $1/9$ (c) 3 (d) 9

Q7. If $A(\text{adj } A) = \begin{bmatrix} 2026 & 0 & 0 \\ 0 & 2026 & 0 \\ 0 & 0 & 2026 \end{bmatrix}$, then the value of $|\text{adj } A|$ is equal to :

- (a) 2026 (b) $(2026)^{-1}$ (c) 2026^{-2} (d) 2026^2

Q8. If $A(\text{adj } A) = \begin{bmatrix} 3 & 0 & 0 \\ 0 & 3 & 0 \\ 0 & 0 & 3 \end{bmatrix}$, then the value of $|2A|$ is:

- (a) 6 (b) 12 (c) 54 (d) 24

Q9. If the points (2,3), (0,4) and (p,2) are collinear, then the value of p is:

- (a) $4/7$ (b) 4 (c) $-3/7$ (d) -4

Q10. If the area of ΔABC with vertices A(3,1), B(-2,1), C(0,k) is 5 units then the value of k are:

- (a) 3, 1 (b) -1, 3 (c) -1, 2 (d) 0, 2

Q11. If A is a non-singular matrix, then which of the following is not true?

- (a) $\text{adj } A$ is singular (b) $(\text{adj } A)^{-1} = (\text{adj } A^{-1})$ (c) $|A| \neq 0$ (d) A^{-1} exists

Q12. Given that $P = \begin{bmatrix} 2 & -1 \\ 3 & 4 \end{bmatrix}$, $Q = \begin{bmatrix} 5 & 2 \\ 7 & 4 \end{bmatrix}$ and $R = \begin{bmatrix} 2 & 5 \\ 3 & 8 \end{bmatrix}$, find a matrix S, such that $PQ - RS = 0$.

Q13. If $A = \begin{bmatrix} 1 & -1 \\ 2 & 1 \end{bmatrix}$, $B = \begin{bmatrix} 0 & 1 \\ 2 & 4 \end{bmatrix}$, $C = \begin{bmatrix} -1 & 2 \\ 1 & -4 \end{bmatrix}$ and $AB - CD = 0$, then find the matrix D.

Q14. If A, B and C are square matrices of order 3 and $|BC| = 2 |A|$, then find $|2 A^{-1} BC|$.

Q15. If $A = \begin{bmatrix} 2 & 0 & 0 \\ 0 & 3 & 0 \\ 0 & 0 & 5 \end{bmatrix}^{-1}$, then find matrix A.

Q16. Let A (1,3), B (0,0) and C(k,0). Using determinants, find k when the area of ΔABC is 3 square units.

Q17. If $\begin{bmatrix} 3 & -1 & \sin 3x \\ -7 & 4 & \cos 2x \\ -11 & 7 & 2 \end{bmatrix}$ is a singular matrix, then find all values of x, where $x \in [0, \frac{\pi}{2}]$

Q18. If $\begin{vmatrix} x & \sin \theta & \cos \theta \\ -\sin \theta & -x & 1 \\ \cos \theta & 1 & x \end{vmatrix} = 8$, then write the value of x , $x \in R$.

Q19. If $f(x) = \begin{vmatrix} a & -1 & 0 \\ ax & a & -1 \\ ax^2 & ax & a \end{vmatrix}$, then find $f'(x)$.

Q20. Find $|3AB|$, If $A = \begin{bmatrix} 2 & 5 \\ 1 & 3 \end{bmatrix}$ and $B = \begin{bmatrix} 5 & 3 \\ 4 & 2 \end{bmatrix}$.

Q21. If A, B and C are angles of a triangle, then find the value of $\begin{vmatrix} \sin(A+B+C) & \sin B & \cos C \\ -\sin B & 0 & \tan A \\ \cos(A+B) & -\tan A & 0 \end{vmatrix}$.

Q22. If $A = \begin{bmatrix} 2 & 1 & -1 \\ 3 & 1 & -2 \\ 1 & 0 & -1 \end{bmatrix}$, such that $AB = BA$, then find B , when it is given that B is non-zero matrix.

Q23. If $A = \begin{bmatrix} 5 & 0 & 41 \\ 2 & 3 & 2 \\ 1 & 2 & 1 \end{bmatrix}$ and $B^{-1} = \begin{bmatrix} 1 & 3 & 3 \\ 1 & 4 & 3 \\ 1 & 3 & 4 \end{bmatrix}$, find $(AB)^{-1}$. Also find $|(AB)^{-1}|$.

Q24. A man goes to buy fruits from the market. The shopkeeper informs him that 4 apples, 3 oranges and 2 bananas cost Rs. 60; 2 apples, 4 oranges and 6 bananas cost Rs. 90; whereas 6 apples, 2 oranges and 3 bananas cost Rs. 70. Using matrix method, find the cost of one fruit of each kind. [CBSE 2026]

Q25. On the inauguration day of a new showroom, a lucky draw was organized and some vouchers of Rs. 1,000 and Rs. 500 were given to the lucky draw winners. A total of 60 vouchers were given on the day. The number of Rs. 1000 vouchers added to 3 times the number of Rs. 500 vouchers, gives 100. Express the given information as a system of linear equations in two variable. Hence find the number of vouchers of each type by matrix method. [CBSE 2026]

Q26. A scholarship is a sum of money provided to a student to help him/her pay for education. Some students are granted scholarships based on their academic achievements, while others are rewarded based on their financial needs. Every year a school offers scholarships to girl children and meritorious achievers based on certain criteria. In the session 2022-23, the school offered monthly scholarship of Rs 3,000 each to some girl students and Rs. 4,000 each to meritorious achievers in academics as well as sports. In all, 50 students were given the scholarships and monthly expenditure incurred by the school on scholarships was Rs. 180,000. Based on the above information, answer the following questions.

(i) Express the given information algebraically using matrices.

(ii) Check whether the system of matrix equations so obtained is consistent or not?

(iii) Find the number of scholarships of each kind given by the school, using matrices.

(iv) If the amount of scholarship given to each girl child and meritorious child is interchanged. What would be the monthly expenditure incurred by the school?

Q27. A carpenter needs to design a wooden box in the shape of a cuboid such that the sum of its length and breadth is 3cm more than its height. Twice of its length, thrice of its breadth and its height add upto 10cm. Its breadth added to 7 times its height is 1cm less than 3 times its length. On the basis of the above information, answer the following questions: [CBSE 2026]

(i) Write the equations representing the various dimensions and express them as matrix $AX = B$.

(ii) Determine whether A^{-1} exists. Justify your answer.

(iii) Find A^{-1} OR Find: $A^2 + 7I$

Q28. If $A = \begin{bmatrix} 1 & 2 & 1 \\ 1 & 0 & 3 \\ 2 & -3 & 0 \end{bmatrix}$, find A^{-1} . Using the above obtained inverse of matrix A , solve the following system

of equations: $x + 2y + z = 7$, $x + 3y = 11$, $2x - 3y = 1$.

Q29. If $P = \begin{bmatrix} 1 & -1 & 0 \\ 2 & 3 & 4 \\ 0 & 1 & 2 \end{bmatrix}$ and $Q = \begin{bmatrix} 2 & 2 & -4 \\ -4 & 2 & -4 \\ 2 & -1 & 5 \end{bmatrix}$, find QP and hence solve the following system of equations using matrices: $x - y = 3; 2x + 3y + 4z = 17; y + 2z = 7$.

Q30. Obtain the value of $\Delta = \begin{vmatrix} 1+x & 1 & 1 \\ 1 & 1+y & 1 \\ 1 & 1 & 1+z \end{vmatrix}$ in terms of x, y and z . Further if $\Delta = 0$ and x, y, z are non-zero real numbers, prove that: $x^{-1} + y^{-1} + z^{-1} = -1$

Q31. Find the product $\begin{bmatrix} 1 & -1 & 0 \\ 2 & 3 & 4 \\ 0 & 1 & 2 \end{bmatrix} \begin{bmatrix} 2 & 2 & -4 \\ -4 & 2 & -4 \\ 2 & -1 & 5 \end{bmatrix}$, Hence solve the given system of equations: $x - y = 3, 2x + 3y + 4z = 17, y + 2z = 7$.

ASSIGNMENT: BUSINESS STUDIES

- Q1.** Mr. X, the director of a company many times get involved in activities like procurement of raw material, production and dispatch of goods, employee discipline etc.
- Name the level of management Mr. X belongs to.
 - Do you think he must be involved in such activities? Give reason.
 - Give two important functions, Mr. X must perform?
- Q2.** Management of Global Ltd. fulfills all its objectives and the organization is able to work effectively and efficiently. It is using environment friendly methods of production and disposes off the wastematerial by either recycling it or using the same for landfill in such a manner that aquatic life is notdisturbed. It also provides employment opportunities to the disadvantaged sections of the society.
- Identify the objective of management which the company is fulfilling by doing such activities.
 - State any other 2 objectives which they should fulfill?
 - Which two values is the company achieving by their activities?
- Q3.** In ABC Ltd., the purchase department purchased 20 tonnes of raw material for production department. Although only 15 tones was needed by production department. Due to this, goods were overproduced and were not accepted by sales department. As a result, some goods remained unsold. Which aspect of management is lacking among various departments. Give any 2 importance of the above asked element.
- Q4.** The marketing manager of Alpha Ltd. fixed the target for all his sales executives and gave them all the possible authorities to achieve it. They were asked to submit to him their performance report at theend of the month. All of them did the same. On the receipt of report, the expected and actual results ofsales executives were compared, on this basis future course of action was decided. The sales Executivealso wrote in their report what the expectations of the customers from the company were. Majoritythem had written that they wanted the co. to cooperate in the construction of Dharmsala going on in thecity. The marketing manager placed this demand before the Board of Directors. This was happily accepted.
- Identify the functions of management described in above paragraph by quoting relevant lines.
 - Which 2 values are given to society? (c) Which objective is being highlighted here?
- Q5.** Three groups of employees of Ganga Ltd. are working at different posts. The first group is responsible for survival and growth of organization. This group continuously keeps a watch over the business environment. With a view of coping with the changes going on in the business environmentthis group immediately discusses the change to be brought about in company's plan. The second groupis to explain the policies by superiors to the employees and developing the feeling of cooperation amongall the departments. The Third group is responsible for maintaining quality and safety standards and minimizing wastage.
- Identify the levels of management described in above paragraph by quoting relevant lines.

- Q6. Grey Ltd. is facing a lot of problems these days. The Co's margin is declining day by day. The Production manager is blaming marketing department whereas marketing is blaming production department for not maintaining the quality. Finance department is blaming the both.
- What aspect of management do you think is lacking in the above situation.
 - Give the importance of that concept.
- Q7. Rahul is planning to launch a new line of products in 2 years time. However at present he has reduced its prices by 10% to retain its existing customers. What are the 2 main objectives he is focusing at? Give reason.
- Q8. After every three months, Mr. Ramakant offers new schemes to its distributors. He tries to bring in changes keeping in mind the needs of a customer and offers from his competitors. This gives him an edge over his competitors. Identify the characteristic of management in above situation? Explain it briefly.
- Q9. Toys & toys Ltd. received a new order of 10,000 toys to be delivered in 15 days, failing which the tract will be null and void. To complete this, Mr. Pankaj, production manager planned to outsource the production and deliver the order on time. The outsourcing of production results in increase in cost by 30%. Do you think the production manager performed his duties effectively and efficiently? Give reasons.
- Q10. Gemini Circus is organizing shows internationally for the last thirty years. Their shows have been successful across the globe. Of late, their shows are not as popular as they were in the past. After analyzing, they are thinking of bringing necessary changes in their shows to gain popularity.
- Identify which characteristics of management is reflected in above situation? Give reasons.
 - Which function of management is indicated here?
- Q11. Ford Motors aims to produce and sell 1,50,000 cars in 2014. To achieve this target the production department strives for timely production and sales department takes all possible steps to sell them. Due to combined efforts of all the departments, company can achieve its target.
- Which importance of management is highlighted here? Explain any two other significances of management.
 - Which other aspect of management helps in achieving goal in Ford Motors.

Chapter 3: Question No. 1 to 6 are based on the given text. Read the text carefully and answer the questions: Mohan works in a bulb manufacturing company. Each bulb that is manufactured is of standard size and quality. Further, if there is any unrequited 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 purchasing 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. Mohan 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 until it reaches the desired person in the production department.

- The principle of management discussed in the above para is given by ____.**
 - Henry Fayol
 - None of these
 - Sun Tzu
 - F.W. Taylor
- Which management function is discussed in the above para?**
 - Controlling
 - Organising
 - Staffing
 - Planning
- Which technique of management is followed here?**
 - None of these
 - Method study
 - Fatigue study
 - Standardization and simplification
- Name the principle of management followed here by the company?**
 - Scalar chain
 - Departmentalization
 - None of these
 - Division of Work
- Which option is now available to Mohan since the company is not allowing him to interact with the concerned worker in the production department?**
 - All of these
 - Organization
 - Authority and Responsibility
 - Gang-plank
- Which principle of management is followed by the company by creating a separate department?**
 - Departmentalization
 - Scalar Chain
 - Method study
 - Division of work

7. Principles of management equip the managers to foresee the cause and effect relationships of their decisions and actions so that the wastages associated with a trial and error approach can be overcome. Identify the point of significance of principles of management highlighted here.
- a. Scientific decisions b. Fulfilling social responsibility c. Optimum utilisation of resources
d. Meeting environment
8. The violation of which principle of management results in the disorderly flow of information?
- a. Authority and Responsibility b. Stability of employees c. Scalar Chain d. Unity of Command
9. In which year Taylor became an engineer from a worker?
- a. 1903 b. 1878 c. 1901 d. 1884
10. **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 explanation of A. c. A is true but R is false.
b. Both A and R are true but R is not the correct explanation of A. d. A is false but R is true.
11. **Assertion (A):** Unity of Command means One unit on one Plan.
Reason (R): The Principle of Unity of Command reduces the chances of ego clashes among superiors and leads to more effective working.
- a. Both A and R are true and R is the correct explanation of A. c. A is true but R is false.
b. Both A and R are true but R is not the correct explanation of A. d. A is false but R is true.
12. State True or False:
- i. Fayol is known as the father of scientific management. a. True b. False
ii. Functional foremanship propounded by Taylor is based on principle of division of work.
13. Fill in the blanks:
- a. ____ study seeks to eliminate wasteful and unnecessary movements so that it takes less time to complete a job efficiently.
b. The objective of ____ suggested by Taylor is to increase the efficiency of workers by selecting standard tools and equipment and maintaining standard working conditions.
14. Match the following:
- | | |
|--|------------------------------|
| (a) Taylor's principles are concerned with | (i) Function of managers |
| (b) Taylor laid great emphasis on | (ii) Management efficiency |
| (c) Fayol's principles are concerned with | (iii) Worker's efficiency |
| (d) Fayol laid great emphasis on | (iv) Standardisation of work |
15. Ajay kumar is a sales manager in a Soap company. He is given the responsibility of meeting a sales target of 1500 detergents in a month. To achieve this target, Ajay kumar needs 30 sales executives. However, he has just 18 executives under him and he is not given the authority to employ 12 more executives. Ajay Kumar is able to sell only 900 Soap only. The General Manager of the company blames Ajay kumar for not achieving the target results. Do you think Ajay kumar can be blamed for this?
16. Which principle suggests that the interests of an organisation should take priority over the interests of any one individual employee?
Ramesh had recently completed his graduation from a well-known institute in Kolkata. He was too much interested in Graphic Designing and Printing therefore he pursued a side course along with his graduation. Now, he set up a Printing Industry Ramesh Printers Ltd in a rural area where a printing facility was not available. Its main business was to print visiting cards and advertisement banners. One negative factor that is affecting this industry to some extent is that the preferences of customers are changing. They are shifting from Traditional Marketing to Digital Marketing as most of the businesses have become online. It has also been noticed that in Printing Industry only those companies are making huge profits that have adopted modern technology. Recently, the government has made such changes in tax policy that will have a positive impact on the Printing Industry. The Managing Director of Ramesh Printing Ltd. made a thorough study of the business environment and accordingly, he made necessary changes in the working of their business.

1. One of the major step taken was to start a website to take orders online. Identify the dimension of Business Environment highlighted here?
 - a. Economic Environment
 - b. Legal Environment
 - c. Political Environment
 - d. Technological Environment
2. He made necessary changes in the working of their business to meet the current circumstances. Which importance of business environment scanning has been discussed here?
 - a. Tapping and Assembling Resources
 - b. Growth and expansion
 - c. Adaption to changes
 - d. Getting first mover advantage
3. One negative factor that is affecting this industry to some extent is that the preferences of customers are changing. Which dimension of Business Environment is highlighted here?
 - a. Economic Environment
 - b. Legal Environment
 - c. Political Environment
 - d. Social Environment
4. Recently, the government has made such changes in tax policy that will have a positive impact on the Printing Industry. Dimension of Business Environment is referred to here?
 - a. Legal Environment
 - b. Economic Environment
 - c. Political Environment
 - d. Technological Environment
5. It has also been noticed that in Printing Industry only those companies are making huge profits that have adopted modern technology. Identify the dimension of Business Environment highlighted here?
 - a. Technological Environment
 - b. Legal Environment
 - c. Economic Environment
 - d. Political Environment
6. Which value is highlighted here in this case?
 - a. Rural Development
 - b. Sympathy towards others
 - c. Gender Equality
 - d. Saving Environment
7. Advance understanding of business environment will help in:
 - a. Developing new principles of management
 - b. Nothing
 - c. Privatisation
 - d. Planning and Policy Formulation
8. _____ is concerned with the withdrawal of state from an industry or sector, partially or fully.
 - a. Liberalisation
 - b. Modernisation
 - c. Privatisation
 - d. Globalisation
9. According to a recent survey, 90% students have shifted 4G and 5G phones from 2G and 3G phones. It is an example of _____ environment.
 - a. social
 - b. economic
 - c. political
 - d. technological
10. **Assertion (A):** Social Environment has a great impact on business in the long run.
Reason (R): Increase in the sale of sweets during festivals is due to the change in Social Environment.
 - 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.
11. **Assertion (A):** Specific Forces affect the business enterprises only indirectly.
Reason (R): Suppliers, Investors, and Customers are examples of Specific Forces.
 - 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.
12. State True or False:
 - i. Disinvestment means investment in different sectors. a. True b. False
 - ii. After the Introduction of N.E.P companies become market-oriented. a. True b. False
13. Fill in the blanks:
 - a. The environment is a _____ phenomenon that is relatively easier to understand in parts but difficult to grasp in its totality.
 - b. Colour television has wiped out the market for black and white television. It is an example of _____
14. Which policy of Indian Government has moved India towards globalisation?
15. One of the strong objections against the increasing number of automobiles is that it has resulted in the rising level of pollution. Further, due to heavy cost of import of fuel, prices of petroleum products are increasing alarmingly. The Government of India has proposed the automobile industry to produce fuel-efficient vehicles. Which dimension of business environment is being referred to in the given situation?

16. As a result of the decision by Britain to exit to European Union the new trade agreements will come into force from the EU as it accounts for 35 - 40% of auto component exports from India. Tata Motors-owned Britain's largest carmaker Jaguar Land Rover (JLR) has been in Britain for three decades and makes 4,75,000 cars a year in the country of which most of them are exported inside the European Union and beyond. JLR estimates that their annual profit could be cut by one billion pounds (\$1.47 billion) by the year 2020. In the context of the above case:
- Explain why are all the elements of the business environment considered to be closely interrelated?
 - Name any two related dimensions of the business environment.
18. List some important factors that influence the working of a business enterprises?
19. Recently the Government of India has announced the repealing of various outdated statutory legislations. Identify the dimension of business environment and explain it briefly.
20. What is meant by Business environment? State any three points of its importance.

ASSIGNMENT: ECONOMICS :MACRO ECONOMICS

- Q1. Define consumption goods.
- Q2. Foreign embassies in India are a part of India's: (Choose the correct alternative)
- Economic Territory
 - Geographical territory
 - Both (a) and (b)
 - None of the above
- Q3. Supply of money refers to quantity of money _____ (Choose the correct alternative)
- As on 31st March
 - During any specified period of time
 - As on any point of time
 - During a fiscal year
- Q4. Demand deposits include _____ (Choose the correct alternative)
- Saving account deposits and fixed deposits
 - Saving account deposits and current account deposits
 - Current account deposits and fixed deposits
 - All types of deposits
- Q5. Market Price and factor cost will be equal when there is:
- No direct tax
 - No Indirect tax
 - No Subsidy
 - No Indirect tax and No subsidy
- Q6. State, giving reasons, whether the following statements are true or false: (3)
- Currency created by the Central Bank is called bank money.
 - Higher the Legal Reserve Ratio (LRR), greater would be the money creation in the economy.
 - Money supply is a stock variable
- Q7. Giving reasons classify the following into stocks and flows:
- Wealth
 - Savings
 - Gross Domestic Product
- Q8. Discuss briefly, the circular flow of income in a two sector economy with the help of a suitable diagram.
- Q9. How will you treat the following in the calculation of Gross Domestic Product of India?

Give reasons for your answer.

- Profits earned by a branch of foreign bank in India
- Salaries of Indian Employees working in embassy of J

Calculate (a) Net Value added at factor cost and (b) Value of output at market price from the following data. (Rs. in arab)

i. Subsidies	40
ii. Intermediate costs	200
iii. Compensation of employees	400
iv. Depreciation	50
v. Royalty	5
vi. Interest	25

vii. Indirect Taxes	100
viii. Rent	10
ix. Profits	60
x. Net Change in stocks	20
xi. Corporate Profit Tax	20
xii. Indirect Taxes	50

Q15. State giving reasons whether the following will be included in national income:

- (i) Growing vegetables in a kitchen garden of the house/services rendered by family members to each other.
- (ii) Production of tobacco products, liquor, etc.
- (iii) Harmful effects of air pollution caused by factories or vehicle

ASSIGNMENT: INFORMATICS PRACTICES

DO FOLLOWING QUESTIONS IN NOTE BOOK...

Networking

1. **What do you understand by the term network?**
2. **Mention any two main advantages of using a network of computing devices.**
3. **What is VoIP, and how does it function?**
4. Mention any two main advantages of using a network of computing devices.
5. Define the term topology. What are the popular network topologies?
6. Identify the type of topology from the following:
 - (a) Each node is connected with the help of a single cable.
 - (b) Each node is connected with central switching through independent cables.
7. What do you mean by a modem ? Why is it used ?
8. Explain the following devices:
9. (a) Switch (b) Repeater(c) Router(d) Gateway
10. **Why is a switch called an intelligent hub?**
11. Neha is the network administrator of her school. She has been assigned the task of designing a network for the school's 3-floor building. Each floor has 25 computers. Answer the following: a) Suggest the most suitable topology. b) Which device should she use to connect the computers on a single floor? c) Which IP addressing method should be used for easy administration? d) How can she ensure data security in this network?

SQL

I Do the following MCQ:

1. The statement in SQL which allows changing the definition of a table is
 - a. (a) Alter. (b) Update. (c) Create. (d) select.
2. The statement in SQL which allows changing the definition of a table is
 - (a) Alter. (b) Update. (c) Create. (d) select.
3. Key to represent relationship between tables is called
 - (a) Primary key (b) Secondary Key (c) Foreign Key (d) None of these
4. _____ produces the relation that has attributes of R1 and R2
 - a. (a) Cartesian product (b) Difference (c) Intersection (d) Product
5. Which of the following is a valid SQL type?
 - a. (a) CHARACTER (b) NUMERIC (c) FLOAT (d) All of the above
6. The RDBMS terminology for a row is (a) tuple. (b) relation. (c) attribute. (d) degree.
7. Create table is a) DDL Command b) DML command c) DCL Command d) None of these

8. Which operator performs range searching?
a) Like b) Between c) IN d) None of these
9. Which function gives cardinality?
(a) count(column_name) b) count(*) c) min(column_name) d) None of these
10. Which one is not a DDL COMMAND?
a) Create b) Alter c) Drop d) None of these

II Consider the following table named EXAM with details of marks. Write command of MySQL for (i) to (iv) and output for (v) to (vii).

Table EXAM

Adno	SName	Percentage	Csection	Stream
R001	Sushant	90.2	12A	Science
R002	Vaidyanath	80.5	12B	Humanities
R003	Miara	68.9	12B	Science
R004	Niara	96.0	12A	Commerce
R005	Shinjini	88.9	12D	Commerce

- (i) To display all information of the students of humanities in descending order of percentage.
- (ii) To display Adno, Name, Percentage and Stream of those students whose name is any character as “I”.
- (iii) To add another column Bus_Fees with datatype and size as Decimal(8,2).
- (iv) To increase percentage by 2% of all the Humanities students.
- (v) SELECT COUNT(*) FROM EXAM;
- (vi) SELECT SName, Percentage FROM EXAM WHERE Name LIKE “N%”;
- (vii) SELECT Sname, Percentage FROM EXAM WHERE Adno=“Science”;
- (viii) SELECT MAX(Qty) FROM SHOPEE WHERE City = ‘Mumbai’

III Consider the following table and answer the questions :

TABLE: HOSPITAL

No.	Name	Age	Department	Dateofadm	Charges	Sex
1	Sandeep	65	Surgery	20/02/98	300	M
2	Ravina	24	Orthopedic	20/01/98	200	F
3	Karan	45	Orthopedic	19/02/98	200	M
4	Tarun	12	Surgery	01/01/98	300	M
5	Zubin	36	ENT	20/01/98	250	M
6	Ketaki	16	ENT	24/02/98	300	F
7	Ankita	29	Cardiology	20/02/98	800	F
8	Zareen	45	Gynecology	22/02/98	300	F
9	Kush	19	Cardiology	22/02/98	800	M
10	Shailya	31	Medicine	19/02/98	400	F

- I. To show all information about the patients of cardiology department.
- II. To list the name of female patients who are in orthopedic department.
- III. To list names of all patients with their date of admission in ascending order.
- IV. The display Patient’s Name, charges, age for male patients only.

Write output for the following SQL commands for Hospital Table.

- I. Select COUNT (DISTINCT Charges) from HOSPITAL;
- II. Select MIN (Age) from HOSPITAL where Sex = ‘M’;
- III. Select SUM(Charges) from HOSPITAL where Sex = ‘F’;
- IV. Select AVG (Charges) from HOSPITAL where age>36;

IV Based on Below Table write SQL queries for below questions: Minerals:

MineralID	Name	Hardness	Color	Density
1	Quartz	7	Clear	2.65
2	Diamond	10	Colorless	3.52
3	Talc	1	Green	2.7
4	Feldspar	6	White/Gray	2.56
5	Calcite	3	White	2.71

- I. Write a query to find the average density of all minerals
- II. Write a query to display maximum and minimum density color wise.
- III. Write a query to display first three character of the minerals name
- IV. Write a query to count the number of minerals for each hardness level.

V Riya is responsible for maintaining the Student Records Database. She needs to access some information from the STUDENTS table for an upcoming report. Help her extract the following information by writing the desired SQL queries as mentioned below.

Student_ID	Name	Course	Enrollment_Date	Marks	City
1001	Priya	Computer Sci	2022-07-15	85.7	Mumbai
1002	Aman	Business	2021-08-20	78.2	Delhi
1003	Neha	Arts	2023-01-05	92.6	Bangalore
1004	Rohan	Engineering	2020-11-12	88.5	Chennai
1005	Anaya	Medical	2022-03-18	73.5	Hyderabad

Write the output of the following queries:

- I. SELECT Course, COUNT(Student_ID) AS Total_Students FROM Students GROUP BY Course;
- II. SELECT Name, City FROM Students WHERE City LIKE 'B%';
- III. SELECT Student_ID, Name, Enrollment_Date FROM Students ORDER BY Enrollment_Date ASC;
- IV. SELECT Upper(Name), round(Marks) FROM Students

VI Consider the table ORDERS as given below

O_Id	C_Name	Product	Quantity	Price
1001	Jitendra	Laptop	1	12000
1002	Mustafa	Smartphone	2	10000
1003	Dhwani	Headphone	1	1500

Note: The table contains many more records than shown here.

A) Write the following queries:

- (I) To display the total Quantity for each Product, excluding Products with total Quantity less than 5.
- (II) To display the orders table sorted by total price in descending order.
- (III) To display the distinct customer names from the Orders table.
- (IV) Display the sum of Price of all the orders for which the quantity is null.

B) Write the output

- (I) Select c_name, sum(quantity) as total_quantity from orders group by c_name;
- (II) Select * from orders where product like '%phone%';
- (III) Select o_id, c_name, product, quantity, price from orders where price between 1500 and 12000;
- (IV) Select max(price) from orders;

ASSIGNMENT WORKSHEET: PHYSICAL EDUCATION

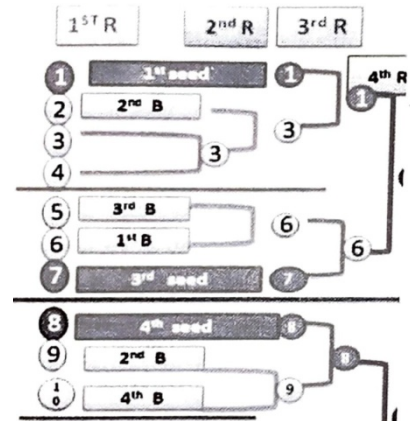
Q.1. With the aim of promoting physical fitness and healthy lifestyle amongst students the Physical education Teacher at XYZ School plans to organize intramural competitions at school. For conducting the event he has given this assignment to the students of class XII who have taken up Physical Education subject so that they can get first had experience of organizing events. On the basis of given information answer the following questions:

- A. The work of committees is divided into _____
- (a) Pre, during and post (b) Pre and post
(c) Pre and during (d) During and Post
- B. Match the following
- (a) Technical committee (i) To provide shifting facility
(b) Finance committee (ii) To resolve dispute
(c) Transport committee (iii) To deals with money and expenditure
(d) First aid committee (iv) To provide medical facility
- (a) a-ii, b-iii, c-i, d-iv (b) a-iii, b-ii, c-i, d-iv
(c) a-ii, b-iii, c-iv, d-I (d) a-iv, b-iii, c-i, d-ii
- C. Which is not the objective of Sports Tournament?
- (a) To Provide Recreation (b) To help in overall development
(c) To achieve high performance (d) To provide opportunity.

Q.2 Below given is the Tournament fixture procedure of a CBSE Football National competition:

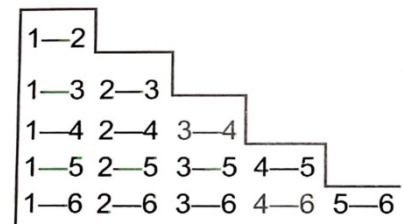
On the basis of the above data, answer the following questions:

- A. What is the number of Non-Seeded Teams in the Tournament?
(a) 04 (b) 09 (c) 12 (d) 07
- B. The provision which places good teams in separate halves or pools so that they do not play with other good teams at earlier Rounds is known as _____
- (a) Bye (b) League tournament
(c) Seeding method (d) Knock out Tournament
- C. Which of the following is not a Seeded Team?
(a) Team 10 (b) Team 08
(c) Team 13 (d) Team 07



Q.3 .Below given is the Tournament fixture procedure of a CBSE Volley ball National competition: On the basis of the above data, answer the following questions:

- A. The formula for calculating number of matches in Round Robin tournament are where 'N' is number of teams is _____
- (a) $N(N - 1)/2$ (b) N (c) (N - 1) (d) (N + 1)
- B. In League tournaments the winner is decided by
- (a) British method (b) American Method
(c) No of Matches won (d) Both a and b
- C. Which of the following is Not a League Fixture Procedure?
(a) Ladder method (b) Stair method
(c) Cyclic method (d) Tabular method



Q.4. Competing in physical activities has been the natural tendency of humans. The competitions or tournaments are held according to the set rules and regulations. The success of the tournament

depends upon suitable fixture. Observe the below given fixture and answer the questions.

1. The method followed in drawing the fixture is _____

- (a) League (b) knockout
(c) Ladder (d) combination

2. Number of matches played can be calculated by the formula _____

- (a) N (b) N-1
(c) N+1 (d) N+2

3. The advantage of this tournament is _____

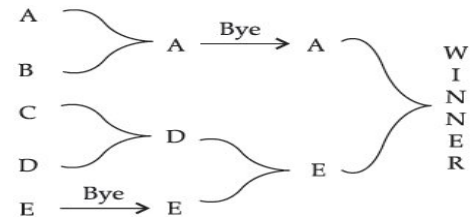
- (a) Economical (b) Less time
(c) both (a) and (b) (d) none of the above

4. In this type of tournament, a team once defeated gets

- (a) eliminated (b) bye (c) another chance (d) wild card entry

5. A privilege given to a team to play at a higher round is called _____

- (a) fixture (b) bye (c) reward (d) All of the above



Q5. ABC School is one of the reputed schools in their location for the number of sports facilities it provides to its stakeholders. Keeping that in consideration CBSE Sports cell has given them the responsibility of conducting CBSE Football cluster. 35 teams have sent their entry for participation in the tournament.

A. Due to large number of teams willing to participate, the school is conducting the competition by _____ fixture.

- a) League b) Knock out c) Staircase d) Challenge

B. The number of Matches in the first round will be _____

- a) 8 b) 12 c) 24 d) 16

D. Total number of matches will be _____

- a) 34 b) 30 c) 28 d) 24

E. Total number of byes in the fixture will be _____

- a) 29 b) 32 c) 27 d) 14

F. Total number of byes in lower half will be _____

- a) 15 b) 16 c) 14 d) 12

Q6. Vikas a state level wrestler has been advised by his coach to take adequate amounts of simple carbohydrates, vitamins, minerals and proteins in his diet along with the training schedule. He has also been advised to follow the diet plan and be aware of the drawbacks of unsupervised dieting.

A. Glucose, Fructose, Lactose are _____

- (a) Simple Carbohydrate (b) Complex Carbohydrate (c) Minerals (d) Fats

B. Which amongst these is a Pitfall of dieting?

- (a) Skipping meal (b) Reducing energy food (c) Drinking lot of water (d) Taking food supplements

C. Amino acids and protein are the _____ of life.

- (a) Building block (b) Training blocks (c) Fitness blocks (d) Both a & b