DARSHAN ACADEMY

Subject Enrichment Assignments - 2025

CLASS: – XI SUBJECT: ACCOUNTANCY

General Instructions:

- Submit your assignments in a neatly arranged file with a cover page and table of contents.
- Use A4 sheets and ensure that your handwriting or print is clear and legible.
- Make your work attractive by adding pictures, drawings, or simple borders.
- Complete the work on time and submit it on the first day after the summer vacation.

Assignment 1: Multiple Choice Questions (MCQs)

1. Which of the following is not a characteristic of accounting?
a) Recording financial transactions
b) Interpreting financial data
c) Measuring non-financial aspects
d) Managing human resources

2. The primary objective of accounting is:
a) To maintain records systematically
b) To calculate profit or loss
c) To provide financial information to stakeholders
d) All of the above

3. Which accounting principle states that revenue should be recognized when earned, not when cash is received?
a) Matching Principle b) Accrual Principle
b) c) Going Concern **Principle** d) Business Entity Principle

4. The concept that assumes a business will continue indefinitely is:
a) Money Measurement Concept b) Accrual Concept
b) c) Going Concern Concept d) Cost Concept

5. Which financial statement represents the financial position of a business?
a) Income Statement **c**) Cash Flow Statement
b) Balance Sheet d) Trial Balance

6. Which of the following accounts has a debit balance?
a) Capital b) Revenue c) Expenses d) Liabilities

7. Business transactions are recorded in:

a) Journal b) Ledger c) Trial Balance d) Both A and B

8. Which concept states that a business and its owner are separate entities?

a) Going Concern Concept b) Business Entity Concept c) Dual Aspect Concept d) Matching Concept

9. Which of the following is not an asset?

a) Cash b) Debtors c) Creditors d) Stock

10. Accounting records only those transactions which are:

a) Non-financial b) Qualitative c) Financial d) None of the above

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Assignment 2:

True or False

1. Accounting is only concerned with recording business transactions. ( )
2. The cash basis of accounting follows the dual aspect principle. ( )
3. Depreciation is recorded as an expense in financial statements. ( )
4. Accounting does not help in decision-making for businesses. ( )
5. The business entity concept states that business and owner are the same. ( )
6. Accounting follows the principle of double-entry bookkeeping. ( )
7. A capital expenditure is shown in the income statement. ( )
8. Profit is calculated by subtracting expenses from revenue. ( )
9. Goodwill is an example of a tangible asset. ( )
10. The matching concept requires revenues and related expenses to be recognized in the same period
11. Every financial transaction affects at least two accounts in double-entry bookkeeping. (True/False)
12. A journal is also known as the book of original entry. (True/False)
13. In the double-entry system, assets are recorded on the credit side of the journal entry. (True/False)
14. Revenue is always recorded on the debit side of a journal entry. (True/False)
15. A ledger is a book where transactions are first recorded before being classified. (True/False)
16. The principle of dual aspect states that every transaction has a two-fold effect. (True/False)

Assignment 3: Fill in the Blanks

1. _____ ensures that revenue is recorded when earned, and expenses are recorded when incurred.
2. The financial position of a business is shown in the _____.
3. The amount of money invested by the owner in a business is called _____.
4. In the double-entry system, every transaction has a _____ and a _____ aspect.
5. Assets = _____ + Owner's Equity.
6. The two main types of accounts in accounting are _____ and _____.
7. The principle that requires all transactions to be recorded at their original cost is called _____.
8. _____ is the process of allocating the cost of a tangible asset over its useful life.
9. _____ refers to money owed by the business to outsiders.
10. _____ accounting records transactions when they occur, regardless of cash flow.
11. The _____ is known as the book of original entry.
12. In double-entry bookkeeping, every transaction has a _____ effect.
13. The process of transferring journal entries to ledger accounts is called _____.
14. The rule for nominal accounts is: Debit all _____ and _____, Credit all _____ and _____.
15. The journal records transactions in a _____ order.
16. The trial balance is prepared to check the _____ accuracy of the ledger accounts.

Assignment 4: Match the Following

Ques 1.

Column A (Terms)	Column B (Definitions/Explanations)
1. Capital	A. Owner's investment in the business
2. Assets	B. Economic resources owned by a business
3. Liabilities	C. Amounts payable by the business
4. Revenue	D. Income earned from business operations
5. Profit	E. Excess of revenue over expenses
6. Drawings	F. Withdrawal of money or goods by the owner
7. Expense	G. Cost incurred to earn revenue
8. Journal	H. Book of original entry

Column A (Terms)	Column B (Definitions/Explanations)
9. Ledger	I. Book of final entry where accounts are classified
10. Trial Balance	J. Statement that checks the mathematical accuracy of ledger accounts

Ques 2.Column A (Accounting Principles)	Column B (Descriptions)
1. Business Entity Concept	A. Business and owner are separate entities
2. Going Concern Concept	B. Business is assumed to continue indefinitely
3. Money Measurement Concept	C. Only transactions measurable in money are recorded
4. Accrual Concept	D. Transactions are recorded when they occur, not when cash is received or paid
5. Cost Concept	E. Assets are recorded at their original purchase pri

Assignment 5 : ASSERTION AND REASONING

Directions:

- A: Both Assertion and Reason are correct, and Reason is the correct explanation of Assertion.
- B: Both Assertion and Reason are correct, but Reason is not the correct explanation of Assertion.
- C: Assertion is correct, but Reason is incorrect.
- D: Assertion is incorrect, but Reason is correct.

1. Assertion (A): The going concern concept assumes a business will continue indefinitely. Reason (R): Financial statements are prepared under the assumption that the business will close soon.

2. Assertion (A): A trial balance helps detect certain errors in accounting.
Reason (R): A trial balance ensures that all transactions are recorded correctly.

3. Assertion (A): Accounting provides information for decision-making.
Reason (R): The primary objective of accounting is to ascertain the financial position and profitability of a business.

4. Assertion (A): Liabilities represent obligations of a business.
Reason (R): Liabilities are always recorded on the debit side of the balance sheet.

5. Assertion (A): According to the Business Entity Concept, the owner and the business are treated separately.
Reason (R): Personal transactions of the owner are recorded in the books of the business.

6. Assertion (A): The Cost Concept states that assets should be recorded at their historical cost.
   Reason (R): Assets should always be recorded at their current market value in the financial statements.

7 Assertion (A): The Money Measurement Concept limits accounting records to transactions expressed in monetary terms.
   Reason (R): Qualitative aspects, such as the skills of employees, are also recorded in the books of accounts.

`Assignment 6 : MCQ

1. Which of the following is the main objective of accounting?
   a) To maintain records of business transactions
   b) To calculate profit and loss
   c) To ascertain the financial position
   d) All of the above
2. Accounting is often called the language of _____.
   a) Business
   b) Economics
   c) Law
   d) Science
3. Which of the following is NOT a function of accounting?
   a) Measurement
   b) Forecasting
   c) Interpretation
   d) Legislation
4. The process of recording financial transactions in a systematic manner is known as:
   a) Bookkeeping
   b) Accounting
   c) Auditing
   d) Budgeting
5. Which of the following users need accounting information?
   a) Investors
   b) Government
   c) Management
   d) All of the above

6. Which of the following is considered an asset?
   a) Creditors
   b) Cash
   c) Loan taken
   d) Capital
7. Which of the following is NOT a liability?
   a) Bank Loan

b) Creditors
c) Debtors
d) Outstanding Expenses

Assignment 7 : MCQ

1. The amount withdrawn by the owner for personal use is called:
a) Capital
b) Drawings
c) Revenue
d) Profit

2. The total amount invested by the owner in the business is called:
a) Asset
b) Expense
c) Capital
d) Liability

3. Expenses incurred to earn revenue are called:
a) Gains
b) Liabilities
c) Expenses
d) Assets

4. The Business Entity Concept states that:
a) Business and owner are the same
b) Business and owner are separate
c) Business transactions include owner's personal transactions
d) All transactions are ignored

5 The Going Concern Concept assumes that the business will:
a) Operate for a long time
b) Close down soon
c) Change ownership every year
d) Only work on short-term projects

6 According to the Money Measurement Concept, accounting records only:
a) Monetary transactions
b) non-monetary transactions
c) Personal transactions of the owner
d) Future transactions

7 The principle that states that every transaction has a dual effect is called:
a) Cost Concept
b) Dual Aspect Concept
c) Consistency Concept
d) Revenue Recognition Concept

Assignment 8 : MCQ

1. Which principle states that expenses should be matched with revenue?
a) Matching Concept
b) Revenue Recognition Concept
c) Accrual Concept
d) Consistency Concept

2. Assets should be recorded at their original cost according to:
a) Matching Concept
b) Cost Concept
c) Going Concern Concept
d) Prudence Concept

3. The Revenue Recognition Principle states that revenue should be recorded:
a) When cash is received
b) When goods are sold or services are provided
c) At the end of the financial year
d) When profit is calculated

4. Which concept ensures that similar transactions are recorded in the same manner over time?
a) Consistency Concept
b) Cost Concept
c) Prudence Concept
d) Accrual Concept

5. Which of the following is an example of a Nominal Account?
a) Cash Account
b) Debtor's Account
c) Rent Paid Account
d) Building Account

6. Which of the following is NOT a characteristic of accounting?
a) Recording financial transactions
b) Providing future predictions
c) Measuring non-monetary aspects
d) Communicating business results

ASSIGNMENT 9 : CASE BASED QUESTIONS

1) Ravi runs a garment shop. He provides uniforms worth ₹30,000 to a nearby school as a donation. He also takes ₹5,000 from the business cash for his personal expenses. However, he does not record these transactions in his books, assuming they are not part of his business.

Questions:

- Which accounting concept is violated when Ravi does not record the donation?
- How should Ravi record the amount taken for personal use in his books?
- Why is it necessary to record such transactions in accounting?

2) Pooja owns a bakery. She takes ₹15,000 from the business account for personal use. She also buys raw materials worth ₹50,000 on credit from a supplier. However, she records both transactions under business expenses.

Questions:

- Which accounting principle is violated when Pooja records personal expenses as business expenses?
- How should the purchase of raw materials on credit be recorded in the books?
- What impact will misclassifying personal expenses as business expenses have on financial statements?

3) Amit runs an online coaching institute. In December 2024, he received ₹1,20,000 as advance fees for coaching classes to be conducted in 2025. He also paid ₹30,000 in December for rent of the upcoming months. However, he recorded the advance fees as revenue and the rent as an expense in 2024 itself.

Questions:

- Which accounting principle is violated when Amit records advance fees as revenue?
- What should be the correct treatment of rent paid in advance?
- Why is it important to follow the Accrual Concept in such cases?

ASSIGNMENT 10 : CASE BASED QUESTIONS

1) Mr. Ramesh owns a small grocery store. He maintains his accounts by recording only cash transactions. He neither records credit sales nor credit purchases. However, at the end of the year, he realizes that he has several outstanding payments from customers and some unpaid expenses.

Questions:

- Which basis of accounting is Mr. Ramesh following?
- What problems might he face while preparing his financial statements?
- Suggest a better basis of accounting for him and justify your answer.

2) XYZ Ltd. is a growing company. Initially, it followed the cash basis of accounting. However, as the company expanded, it started selling goods on credit and incurring expenses that were yet to be paid. The management is now confused about whether they should continue with the cash basis or shift to another system.

Questions:

- What basis of accounting is XYZ Ltd. currently following?
- What difficulties might arise if they continue using the same basis of accounting?

- Why is the accrual basis of accounting considered more suitable for large businesses?

3) A government department records only cash receipts and payments. It does not account for outstanding salaries or unpaid bills. On the other hand, a private company maintains accounts that include credit sales, outstanding expenses, and depreciation**.**

Questions:

- Which basis of accounting is followed by the government department and the private company?
- Why do government departments generally prefer this basis of accounting?
- Explain why the private company follows a different basis of accounting.

DARSHAN ACADEMY

Subject Enrichment Assignments - 2025

CLASS: -– XI SUBJECT: BIOLOGY

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ASSIGNMENT 1: MCQ's

1.Which of the following is not a defining characteristic of living organisms?
a) Growth b) Reproduction c) Metabolism d) Consciousness

2. The term 'taxonomy' refers to:
a) Study of fossils b) Naming and classification of organisms
c) Study of tissues d) Study of heredity

3. The correct sequence of taxonomic categories from higher to lower rank is:
a) Species → Genus → Family → Order → Class → Phylum → Kingdom
b) Kingdom → Phylum → Class → Order → Family → Genus → Species
c) Kingdom → Class → Phylum → Order → Family → Species → Genus
d) Phylum → Kingdom → Class → Order → Genus → Family → Species

4. Binomial nomenclature was given by:
a) Aristotle b) Whittaker c) Carolus Linnaeus d) Darwin

5. Which of the following organisms reproduces but is considered non-living?
a) Bacteria b) Virus c) Fungi d) Amoeba

6. Which taxonomic aid is used to identify plants and animals based on contrasting characteristics?
a) Herbarium b) Key c) Flora d) Manual

7. Scientific name of Mango is:
a) Mangifera indica b) Mangifera Indica c) Mangifera indica Linn. d) Mangifera Indica L.

8. Which of the following taxonomic categories contains organisms most similar to one another?
a) Genus b) Family c) Species d) Order

9. Which one of the following shows maximum diversities?
a) Genus b) Order c) Class d) Species
10. A family includes a group of related:
a) Orders b) Genera c) Species d) Classes

Q11. The five-kingdom classification was proposed by:
a) Aristotle b) Linnaeus c) Whittaker d) Haeckel

Q12. Which of the following is not a feature of Monera?
a) Prokaryotic cell b) Cell wall present c) Membrane-bound organelles d) Unicellular

Q13. Which kingdom includes multicellular, heterotrophic organisms without a cell wall?
a) Plantae b) Fungi c) Animalia d) Protista

Q14. Which of the following organisms belong to Kingdom Protista?
a) Amoeba b) Bacteria c) Penicillium d) Earthworm

Q15. Which of the following is the mode of nutrition in fungi?
a) Autotrophic b) Holozoic c) Saprophytic d) Parasitic only

Q16. Which of these organisms is an example of cyanobacteria?
a) Euglena b) Nostoc c) Amoeba d) Plasmodium

Q17. Slime molds are included in Kingdom:
a) Monera b) Protista c) Fungi d) Plantae

Q18. Which kingdom includes organisms that are prokaryotic and live in extreme conditions?
a) Monera b) Protist c) Archaebacteria d) Fungi

Q19. Which of the following is a characteristic of diatoms?
a) Presence of peptidoglycan in cell wall b) Siliceous cell wall
c) Absence of chlorophyll d) Found only in soil

Q20. Lichens are a symbiotic association of:
a) Fungi and algae b) Bacteria and algae
c) Fungi and protozoa d) Algae and protozoa

Q21. Which of the following plants belongs to Bryophyta?
a) Funaria b) Cycas c) Spirogyra d) Fern

Q22. Which one of the following is a seedless vascular plant?
a) Cycas b) Pinus c) Pteris d) Mango

Q23. In the life cycle of a moss, the dominant phase is:
a) Sporophyte b) Gametophyte c) Zygote d) Embryo

Q24. Which one of the following plants is correctly matched with its group?
a) Sargassum – Algae b) Psilotum – Bryophyte c) Selaginella – Angiosperm d) Mango – Gymnosperm

Q25. Which of the following groups of plants produces naked seeds?
a) Bryophytes b) Pteridophytes c) Gymnosperms d) Angiosperms

Q26. Which pigment is present in red algae (Rhodophyceae)?
a) Chlorophyll a and b b) Chlorophyll a and d c) Phycocyanin d) Phycoerythrin

Q27. Which of the following is homosporous?
a) Selaginella b) Cycas c) Pteris d) Pinus

Q28. Which group of plants is known as "amphibians of the plant kingdom"?
a) Algae b) Bryophytes c) Pteridophytes d) Gymnosperms

Q29. Double fertilization is a characteristic feature of:
a) Gymnosperms b) Bryophytes c) Pteridophytes d) Angiosperms

Q30. Antheridia and archegonia are present in:
a) Algae b) Bryophytes c) Angiosperms d) Gymnosperms

ASSIGNMENT 2: AR TYPE QUESTIONS

Two statements are given one labelled Assertion (A) and other labelled Reason (R). Select the correct answer to this questions from the codes (a),(b),(c) and (d) as given below:-

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

Q1. Assertion (A): Reproduction is not an all-inclusive defining feature of living organisms.
Reason (R): There are many living organisms like mules, worker bees, and infertile human couples that do not reproduce.

Q2. Assertion (A): Metabolism is considered the defining feature of all living organisms.
Reason (R): All chemical reactions taking place inside a living body constitute metabolism.

Q3. Assertion (A): Growth in living organisms is from inside, while in non-living things it is by external addition.
Reason (R): Living organisms grow by cell division, whereas non-living things grow by accumulation of material on their surface.

Q4. Assertion (A): Scientific names are universally accepted and help in identifying organisms.
Reason (R): Binomial nomenclature uses two Latinized names to represent each species.

Q5. Assertion (A): Viruses are considered living because they possess DNA or RNA.
Reason (R): Viruses can carry out metabolism on their own.

Q6. Assertion (A): Bacteria reproduce asexually by binary fission.
Reason (R): Binary fission is a type of mitotic cell division.

Q7. Assertion (A): Archaebacteria can survive in extreme environmental conditions.
Reason (R): They have unique cell walls and metabolic pathways.

Q8. Assertion (A): Slime molds are considered saprophytic protists.
Reason (R): They feed on decaying organic matter and exhibit characteristics of both fungi and animals.

Q9. Assertion (A): Diatoms are chief producers in the oceans.
Reason (R): Diatoms have chlorophyll and perform photosynthesis.

Q10. Assertion (A): Viruses are included in the five-kingdom system of classification.
Reason (R): Viruses possess characteristics of both living and non-living things.

Q11. Assertion (A): Bryophytes are called amphibians of the plant kingdom.
Reason (R): They require water for the fertilization process.

Q12. Assertion (A): In pteridophytes, the gametophyte is dependent on the sporophyte.
Reason (R): Pteridophytes show heterospory.

Q13. Assertion (A): Gymnosperms are called naked-seeded plants.
Reason (R): Their ovules are not enclosed in an ovary.

Q14. Assertion (A): Red algae appear red due to the presence of chlorophyll-b.
Reason (R): Red algae have a pigment called phycoerythrin.

Q15. Assertion (A): Angiosperms show double fertilization.
Reason (R): One male gamete fuses with the egg, and the other with the polar nuclei to form the endosperm.

ASSIGNMENT 3: CASE STUDY BASED QUESTIONS

Case Study Question 1:

Read the scenario below and answer the following questions:

A group of students went on a field trip to a forest and observed various living and non-living things. One student noticed a rock covered with green moss, ants moving in line, and a decaying log emitting a foul smell. The teacher asked them to identify the living characteristics observed in the surroundings.

Questions:

a) Identify and explain three characteristics of living organisms observed in this scenario.
b) Why is it difficult to define life based on just one characteristic?
c) Mention any one exception that challenges the definition of a living organism.

Case Study Question 2:

Read the passage and answer the questions:

A farmer noticed a white cottony growth on his fruits and vegetables kept in a damp storage area. He also observed green slimy patches on the nearby pond and red tide occurrence in coastal waters during his vacation. He consulted a biologist to understand these phenomena.

Questions:

a) Identify the groups of organisms responsible for each of the three observations.
b) State the kingdom each belongs to and justify your answer.
c) Mention two harmful and two useful roles of microorganisms in nature.

Case Study Question 3:

Observe the following case and answer the questions:

An environmental science student is conducting a study on plant diversity in a hill station. She found mosses growing on rocks, ferns in shady moist areas, and tall cone-bearing trees like *Pinus*. She documented their structural features and life cycles.

Questions:

a) Classify each of the three types of plants into their respective divisions.
b) Compare their vascular tissue development and reproductive strategies.
c) Explain the concept of alternation of generations using any one of the observed plant types.

ASSIGNMENT 4: VERY SHORT ANSWER TYPE QUESTIONS

Q1. Which property of living organisms is used in classification?
Q2. Write the scientific name of mango.
Q3. What is systematics?
Q4. What is the nature of cell wall in fungi?

Q5. Name the asexual reproductive structure in fungi.
Q6. What is the mode of nutrition in Monera?
Q7. Name the dominant generation in pteridophytes.
Q8. Which pigment gives brown algae their characteristic color?
Q9. Name one example of a gymnosperm.

ASSIGNMENT 5: SHORT ANSWER TYPE QUESTIONS

Q1. If a mule is alive but cannot reproduce, how do we justify that reproduction is not a defining feature of life?
Q2. Two organisms have similar morphological features but are genetically different. How would taxonomy help distinguish between them?
Q3. Why is metabolism considered a defining feature of life, but growth and reproduction are not?
Q4. Archaebacteria can survive in extreme habitats like hot springs and salt lakes. What unique features enable this?
Q5. How does the presence of siliceous cell walls in diatoms benefit them ecologically?
Q6. Viruses are considered living only when inside a host. Why can't they be placed in any of the five kingdoms?
Q7. Why do bryophytes require a moist environment for reproduction despite being land plants?
Q8. In what way is the life cycle of a fern more evolved than that of a moss?
Q9. Double fertilization is an advanced feature in angiosperms. How does it give them a reproductive advantage?
Q10. Why is it necessary to standardize scientific names when common names are widely used?
Q11. Two living organisms show similar characteristics. How would you determine if they belong to the same species?
Q12. Why is it difficult to define life based on a single defining property?
Q13. Euglena shows both plant-like and animal-like characteristics. Why is it placed in Protista and not in Plantae or Animalia?
Q14. How does the structure of Mycoplasma allow it to survive without a cell wall, unlike other bacteria?
Q15. In what way are lichens important for environmental monitoring?
Q16. How does heterospory in pteridophytes indicate an evolutionary trend toward seed habit?
Q17. Red algae can survive in deeper waters than green algae. Explain why.
Q18. If the sporophyte is dependent on the gametophyte in bryophytes, how does it affect the survival and evolution of the plant?

ASSIGNMENT 6: LONG ANSWER TYPE QUESTIONS

Q1 Define taxonomy and explain its components in detail. Describe the hierarchical categories used in biological classification and illustrate with a suitable example.
Q2 What is binomial nomenclature? Discuss the rules of binomial nomenclature as given by ICBN. What are its advantages? Support your answer with suitable examples.
Q3 Describe the five kingdom classification proposed by R.H. Whittaker. Discuss the characteristics of each kingdom with suitable examples."
Q4 What are the major differences between the Kingdom Monera and Kingdom Protista? Describe the types of organisms included in each and highlight their significance in nature."
Q5 Describe the characteristic features of the division Bryophyta. How are they different from Thallophyta and Pteridophyta? Give suitable examples."

Q6 Give an account of the general characteristics of Gymnosperms. Describe their reproductive structures and how they differ from Angiosperms.

ASSIGNMENT 7:

DIAGRAM BASED QUESTIONS-

1. Draw a well-labelled diagram of a bacterial cell (Monera), showing parts like cell wall, plasma membrane, nucleoid, flagella, pili, and ribosomes.
2. Draw a diagram of a Paramecium or Amoeba (from Kingdom Protista) and label parts like cilia/pseudopodia, nucleus, contractile vacuole, etc.
3. Draw the schematic life cycle of a fungus (e.g., *Rhizopus*), showing stages like spore formation, germination, and hyphal growth.
4. Draw and label the life cycle of a moss (Bryophyte), highlighting the alternation of generations — gametophyte and sporophyte.
5. Draw the structure of a typical fern plant (Pteridophyta) and label roots, rhizome, fronds, and sori.

ASSIGNMENT 8:

ART INTEGRATED ACTIVITY –

Create a **collage or comic strip** showing the **life cycle of a plant group** such as bryophytes, pteridophytes, or gymnosperms. Use **cutouts, drawings, or origami** to show different stages and alternation of generations.

ASSIGNMENT 9: PROJECT WORK

Prepare a Project File on any one the following topic –

Task 1- Project work- Prepare a project report on any one topic suggested below or you can choose any topic of your choice:

- Effect of pH on germination of seed.
- Study the Process of Sugar Fermentation.
- Study of Aquaponics.
- Study of Probiotics and their Preparation.
- Study the effect of light on the distribution of plants.
- Investigation of Antibiotic Resistance in Bacteria:
- Effect of Exercise on Heart Rate and Breathing Rate
- Study of Mendelian Genetics Using Punnett Squares
- Case study on any disease
- The Impact of Different Music Genres on Plant Growth
- Food Preservation Methods
- The Effects of Different Types of Fertilizers on Plant Growth

General Instructions:
1. **Cover page-** Displaying the topic.
2. **Acknowledgement** – Thanking the people or institution that has helped you in completion of your

project.

3. **Certificate**- Mentioning your name and the name of teacher under whose supervision you have completed your work.
4. **Index**- Giving the list of contents with page numbers.
5. **Introduction-** Giving the purpose and importance of a study.
6. **Chapters**- Give a title to each chapter along with details, pictures and newspaper cuttings.
7. **Conclusion**- What did you learn from your study?
8. **Bibliography**- Showing the sources from where you have gathered information.

Present the following in your project report:

- Collection of Data/Statistical Analysis
- Experimentation/Analysis/Explanation and interpretation
- Bibliography

The students must submit original work. Project Report should be hand written only. Students can use primary as well as secondary sources for the research work.

ASSIGNMENT 10:

Activity: Field Study on Local Flora

- Go for a nature walk, collect **leaves or photographs** of at least **five types of plants** from different groups (algae, bryophytes, pteridophytes, gymnosperms, and angiosperms — if available).
- Note **leaf type, plant structure, presence of flowers/cones**, etc.
- Prepare a **plant portfolio or herbarium sheet** with observations and classification.

Presentation Tips:

- Use **a file folder or spiral bind** to organize your assignment neatly.
- Make the headings bold and underlined.
- Use proper margins and spacing for neatness.
- Illustrate your work wherever possible.

Happy Learning & Have a Great Summer! 🌞📖

DARSHAN ACADEMY

Subject Enrichment Assignments - 2025

CLASS: – XI SUBJECT: BUSINESS STUDIES

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Chapter - Nature and Purpose of Business

Assignment 1: True/False Questions

Instructions: Write "True" if the statement is correct an "False" idf it is incorrect.

1. Business is an economic activity that involves production or exchange of goods and services.
2. The primary objective of every business is to earn maximum profit.
3. Business and profession mean the same thing.
4. Business activities can be classified into industry and commerce.
5. The risk element in business is avoidable.
6. The basic purpose of a business is to serve society.
7. Non-economic activities include activities performed for personal satisfaction rather than for money.
8. A business can continue to exist without profits.
9. Business ethics are essential for the long-term success of any business.
10. Advertisement removes the hindrance of information.
11. Industry is a part of commerce.
12. Every trade is a business but every business is not a trade.
13. Economic activities involve production, distribution, and consumption of goods and services.
14. Warehousing is a part of trade.

15. Every business involves an element of risk.

Chapter - Nature and Purpose of Business

Assignment 2: Assertion-Reasoning Questions

Instructions: Read the Assertion (A) and Reason (R) carefully. Choose the correct option:

a) Both A and R are true, and R is the correct explanation of A.

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

c) A is true, but R is false.

d) A is false, but R is true.

1. Assertion (A): Business is a social institution that exists to satisfy human needs.
   Reason (R): The main motive of business is only profit-making.

2. Assertion (A): Business transactions involve the exchange of goods and services.
   Reason (R): Every transaction in business is a legal contract.

3. Assertion (A): Commerce is concerned with trade and auxiliaries to trade.
   Reason (R): Industry is a part of commerce.

4. Assertion (A): Every business involves risks.
   Reason (R): Future is certain, and no business activity can suffer losses.

5. Assertion (A): Economic activities generate income.
   Reason (R): Business is an economic activity as it is undertaken to earn a livelihood.

6 Assertion (A): A businessman takes risks while running a business.
   Reason (R): The future is always predictable in business.

7. Assertion (A): Business ethics ensure the long-term survival of an enterprise.
   Reason (R): Unethical practices lead to public distrust and loss of reputation.

8. Assertion (A): Sole proprietorship is the simplest form of business organization.
   Reason (R): It has unlimited liability and a single owner.

9. Assertion (A): Large-scale production lowers the cost per unit.
   Reason (R): Economies of scale lead to cost advantages in business.

10. Assertion (A): Warehousing is a trade activity.
    Reason (R): Warehousing only deals with the storage of goods and is not directly involved in buying and selling.

11. Assertion (A): A partnership firm must have a minimum of two members.
    Reason (R): Partnership requires an agreement between two or more people to run a business.

12. Assertion (A): Business requires investments in fixed and working capital.
Reason (R): Capital is essential for starting and running a business.

13. Assertion (A): Wholesalers act as a link between manufacturers and retailers.
Reason (R): Wholesalers help in the distribution of goods and reduce transaction costs.

14. Assertion (A): Non-economic activities do not generate income.
Reason (R): Such activities are done for personal satisfaction rather than for financial gain.

15. Assertion (A): The business environment is dynamic.
Reason (R): Business environment keeps changing due to technological and social changes.

Chapter - Nature and Purpose of Business

Assignment 3: Application-Based Questions(Small)

Instructions: Answer the following application-based questions.

1. A factory produces toys and sells them to a wholesaler. Under which category of business activity does this fall?

2. Ramesh started a garment shop in his locality. Identify the type of economic activity he is engaged in.

3. A businessperson provides free stationery to a nearby school. Is this a business activity? Why or why not?

4. Identify the risks involved in the stock market business.

5. Why is profit essential for business survival?

6. Aman wants to start an e-commerce website. What type of business activity will it be classified under?

7. A retailer buys goods in bulk from wholesalers and sells them to consumers. What role does he play in commerce?

8. Explain the difference between trade and business using an example.

9. How does transportation help in commerce?

10. What factors should a businessman consider before setting up a new business?

11. Name any two auxiliaries to trade and explain their importance.

12. Differentiate between industry and commerce.

13. What type of risk is involved in an online business?

14. How do business ethics contribute to the success of a business?

15. Why is capital required in a business?

Chapter - Nature and Purpose of Business

Assignment 4:

Instructions: Read the case study carefully and answer the questions that follow.

1) Rahul started a small bakery in his locality. Initially, his business performed well, but after a year, he faced financial difficulties due to increased competition. He tried to improve his business by adopting online sales and offering discounts to customers. He also partnered with a delivery service to expand his market reach.

1. What type of business is Rahul engaged in?
2. Identify the risks involved in Rahul's business.
3. What steps did Rahul take to sustain his business?
4. How can Rahul further expand his business?
5. Explain the role of competition in business success.

2) Amit and Rohit are childhood friends. Amit's father runs a garment factory, whereas Rohit's father is a government officer. Amit decides to start his own business of organic clothing instead of joining his father's factory. He invests ₹10 lakh from his savings and takes a loan of ₹5 lakh. He sources raw materials from rural artisans and promotes his brand on social media. However, due to increasing competition and changing fashion trends, he faces difficulty in selling his stock. On the other hand, Rohit secures a job as a government officer and earns a fixed salary every month.

a) What type of business activity is Amit involved in?
b) What are the key characteristics of business seen in Amit's case?
c) What type of risk is Amit facing?
d) How is Amit's business different from Rohit's employment?
e) What steps can Amit take to overcome the challenges in his business?

3) Ramesh owns a chemical factory in an industrial area. His business is highly profitable, but the factory releases harmful waste into a nearby river, affecting the health of local residents. A social activist group files a complaint against his factory for environmental pollution. Ramesh, on the other hand, argues that his factory provides employment to hundreds of workers and contributes to the local economy. The government warns him to adopt eco-friendly waste disposal methods, or else his factory will face legal action.

a) What type of business activity is Ramesh engaged in?
b) Do businesses have responsibilities toward society? Justify your answer.
c) What is the impact of Ramesh's factory on the environment?

4) Ananya started a handicraft export business with an investment of ₹15 lakh. She sources handmade products from rural artisans and sells them in international markets. In the first year, she earned a profit of ₹5 lakh, but in the second year, due to increased competition and higher export taxes, her profits declined. She now faces a dilemma of increasing prices or cutting costs.

Questions

a) What is the role of profit in business?

b) Should Ananya focus only on profit maximization? Why or why not?

c) What challenges is Ananya facing in her business?

Chapter - Nature and Purpose of Business

Assignment 5:

MATCH THE FOLLOWING:

Ques1

Column A	Column B
1. Economic Activity	a) Performed to earn money
2. Commerce	b) Trade and auxiliaries to trade
3. Industry	c) Production of goods and services
4. Business	d) Regular activity involving risk and profit motive
5. Trade	e) Buying and selling of goods and services
6. Profession	f) Specialized knowledge and skills required
7. Employment	g) Work done for wages or salary
8. Risk	h) Uncertainty in business outcomes
9. Profit	i) Primary objective of business
10. Business Ethics	j) Moral values in business practices

Ques 2

Column A	Column B
1. Auxiliaries to Trade	a) Services that support trade
2. Business Objective	b) Earning profit and growth
3. Manufacturing Industry	c) Converts raw materials into finished goods
4. Capital	d) Required to start and run a business
5. Primary Industry	e) Extraction of natural resources
6. Secondary Industry	f) Processing and manufacturing of goods
7. Tertiary Industry	g) Provides services to businesses and consumers
8. Warehousing	h) Storage of goods until needed
9. Banking	i) Provides financial assistance to

	businesses
10. Transportation	j) Movement of goods from one place to another

Chapter 2 – Forms of Business Organizations

Assignment 6: True/False Questions

****Instructions: ** Write "True" if the statement is correct and "False" if it is incorrect.**

1. Sole proprietorship is the simplest form of business organisation.
2. In a partnership firm, liability of partners is limited.
3. A company is an artificial person created by law.
4. A cooperative society is formed for the profit maximization of its members.
5. A private company can issue shares to the public.
6. Hindu Undivided Family (HUF) business is governed by the Hindu law.
7. The liability of shareholders in a company is unlimited.
8. A cooperative society is based on the principle of 'one member, one vote'.
9. In a joint-stock company, shareholders directly manage the business.
10. The partnership deed must be registered with the government to be legally valid.
11. The minimum number of members required to form a cooperative society is 10.
12. In a partnership firm, there is no need for an agreement between partners.
13. Public companies must have a minimum of seven members.
14. A sole proprietor has complete control over business decisions.
15. The liability of members in a cooperative society is limited.

Chapter 2 – Forms of Business Organisations

Assignment 7 : Assertion-Reasoning Questions

Instructions: Read the Assertion (A) and Reason (R) carefully. Choose the correct option:

a) Both A and R are true, and R is the correct explanation of A.

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

c) A is true, but R is false.

d) A is false, but R is true.

1. Assertion (A): A sole proprietorship has unlimited liability.
   Reason (R): The owner's personal assets can be used to pay business debts.
2. Assertion (A): Partnership business is run by a single owner.
   Reason (R): A partnership firm must have at least two partners.
3. Assertion (A): A cooperative society works for mutual benefit.
   Reason (R): It operates on the principle of profit maximization.
4. Assertion (A): Private limited companies cannot raise capital from the public.
   Reason (R): They cannot issue shares through the stock exchange.
5. Assertion (A): A Hindu Undivided Family business is governed by Hindu law.
   Reason (R): The eldest male member of the family is called the 'Karta'.
6. Assertion (A): Joint-stock companies have separate legal identities.
   Reason (R): Shareholders are personally liable for company debts.
7. Assertion (A): A sole proprietorship is suitable for small businesses.
   Reason (R): It requires minimal formalities to start.
8. Assertion (A): A cooperative society aims to provide services rather than maximize profits.
   Reason (R): It works on the principle of mutual benefit.
9. Assertion (A): A company continues to exist even if its owners change.
   Reason (R): A company has perpetual succession.
10. Assertion (A): The liability of partners in a partnership is always limited.
    Reason (R): Partnership firms are treated as separate legal entities.
11. Assertion (A): Registration of a partnership firm is compulsory.
    Reason (R): A registered partnership firm has certain legal advantages.
12. Assertion (A): In a sole proprietorship, decision-making is quick.
    Reason (R): The owner does not need to consult others before making decisions.
13. Assertion (A): The shareholders of a company manage the day-to-day operations.
    Reason (R): The Board of Directors is responsible for managing a company.
14. Assertion (A): Cooperative societies require a minimum of 100 members to start.
    Reason (R): Cooperative societies operate for profit-making only.
15. Assertion (A): Public companies must have at least three directors.
    Reason (R): Directors are responsible for decision-making in a company.

Chapter 2 – Forms of Business Organisations

Assignment 8 : Application Based Questions

Instructions: Answer the following application-based questions.

1. Rahul wants to start a business where he has full control. Which form of business is most suitable for him?
2. Asha and Ramesh want to start a business together but do not want unlimited liability. What business structure should they choose?
3. How does the concept of limited liability benefit company shareholders?
4. Why is a sole proprietorship not suitable for large-scale business operations?
5. Why do public companies have to follow strict regulations?
6. Explain how a cooperative society benefits its members.
7. What are the key differences between a partnership and a company?
8. How does the ‘one member, one vote’ principle apply in a cooperative society?
9. Why is it necessary to register a company under the Companies Act?
10. What is the role of the Board of Directors in a company?
11. Why is a joint-stock company considered a separate legal entity?
12. How does a Hindu Undivided Family business operate?
13. Why is decision-making faster in a sole proprietorship compared to a company?
14. What are the advantages of having a private limited company?
15. Why do businesses prefer partnerships over sole proprietorships for larger operations?

Chapter 2 – Forms of Business Organisations

Assignment 9 : MATCH THE FOLLOWING

Ques 1

Column A	Column B
1. Sole Proprietorship	a) Single owner business
2. Partnership	b) Two or more persons managing a business
3. Joint Hindu Family Business	c) Governed by Hindu law
4. Cooperative Society	d) Works on the principle of mutual benefit
5. Private Company	e) Cannot issue shares to the public
6. Public Company	f) Minimum seven members required
7. Limited Liability	g) Restricts financial risk of owners
8. Unlimited Liability	h) Owner's personal assets can be used for debts
9. Board of Directors	i) Governs and manages a company
10. Registrar of Companies	j) Regulates company registration and compliance

Ques 2

Column A	Column B
1. Sole Proprietor	a) Single owner business
2. Partnership Act, 1932	b) Governs partnership firms in India
3. HUF Business	c) Karta manages the business
4. Cooperative Society	d) Works for mutual benefit, not profit
5. Private Limited Company	e) Cannot issue shares publicly
6. Public Limited Company	f) Requires a minimum of seven members
7. Limited Liability	g) Owners' liability is restricted to investment
8. Unlimited Liability	h) Owner's personal assets are at risk
9. Board of Directors	i) Elected to manage a company
10. Registrar of Companies	j) Approves company formation
11. Minimum partners in a partnership	k) Two members
12. Maximum members in a private company	l) Two hundred members
13. Joint-stock company	m) Large-scale business structure
14. Consumer Cooperative	n) Sells goods at fair prices
15. Producer Cooperative	o) Supports small-scale producers

Chapter 2 – Forms of Business Organisations

Assignment 10: (CASE BASED)

I) Rahul is planning to start a business where he will be the sole decision-maker and have complete control over the business operations. He wants to start small with minimal legal formalities and is willing to take full responsibility for any losses. Based on this, answer the following questions.

1. Which form of business organisation is most suitable for Rahul?
2. Mention one advantage and one disadvantage of this form of business.

3. Why is this form of business considered easy to start?
4. What kind of liability does Rahul have in this business?
5. If Rahul wants to expand and include a partner, what changes will occur in his business structure?

II) A family runs a business that has been passed down for generations. The eldest male member of the family, known as the 'Karta,' manages the business, while other family members are co-partners but do not have an active role in management. The liability of the Karta is unlimited, whereas other members have limited liability. Answer the following questions.

1. Identify the form of business described above.
2. Who is the key decision-maker in this business structure?
3. How is the liability of different members defined?
4. Why is this business unique compared to other forms of business?
5. What law governs this type of business in India?

III) DEF Ltd. is a company that manufactures eco-friendly clothing. It has issued shares to the public and is listed on the stock exchange. The company is managed by professionals and follows corporate governance norms. Answer the following questions.

1. What form of business organisation is DEF Ltd.?
2. How does this company raise funds?
3. What role does the Board of Directors play in this organisation?
4. What are the advantages of being listed on the stock exchange?
5. How does limited liability benefit shareholders in this type of business?

IV) A startup company named GHI Pvt. Ltd. is growing rapidly. The company is owned by a few individuals, and its shares are not available to the general public. The owners decide to raise additional funds for expansion but do not want to go public yet. Answer the following questions.

1. What type of business organisation is GHI Pvt. Ltd.?
2. How can this company raise funds without issuing shares to the public?
3. What are the restrictions on share transfer in this type of company?
4. If the company decides to go public, what changes will be required?
5. Mention two advantages of this form of business compared to a sole proprietorship.

DARSHAN ACADEMY

Subject Enrichment Assignments - 2025

CLASS: — XI SUBJECT: CHEMISTRY

General Instructions:

- Submit your assignments in a neatly arranged file with a cover page and table of contents.
- Use A4 sheets and ensure that your handwriting or print is clear and legible.
- Make your work attractive by adding pictures, drawings, or simple borders.
- Complete the work on time and submit it on the first day after the summer vacation.

ASSIGNMENT 1-MCQS

1. The number of significant figures in 0.523 is
(a) 3 (b) 4 (c) 2 (d) 1

2. The mole fraction of benzene in a mixture of 7.8 g of benzene and 46 g of toluene is
(a)1/6 (b) 1/5 (c) ½ (d) 1/3

3. A hydrocarbon contains 75%C. Its empirical formula
(a) CH_2 (b) CH_4 (c) C_2H_2 (d) CH_3

4. A measured temperature on Fahrenheit scale is 200°F. What will this reading be on Celsius scale?
(a) 40°C (b) 94°C (c) 93.3°C (d) 30°C

5. What is the mass percent of carbon in carbon dioxide?
(a) 0.034% (b) 27.27% (c) 3.4% (d) 28.7%

6. For principle quantum number, n = 4, the total number of orbitals having 1 = 3 is
(a) 3 (b) 7 (c) 5 (d) 9

7. The number of d-electrons retained in Fe2+ (At. no. of Fe = 26) ion is
(a) 3 (b) 4 (c) 5 (d) 6

8. The designation of an orbital with in = 4 and 1 = 3
(a) 4s (b) 4p (c) 4d (d) 4f

9 . What transition in the hydrogen spectrum would have the same wavelength as the Balmer transition n = 4 to n = 2 in the He+ spectrum?
(a) n = 4 to n =1 (b) n = 3 to n = 2 (c) n = 3 to n = 1 (d) n = 2 to n = 1

ASSIGNMENT 2-ARQS

In the following questions a statement of assertion followed by a statement of reason is given. Choose the correct answer out of the following choices.

a) Assertion and reason both are correct statements and reason is correct explanation for assertion.

b) Assertion and reason both are correct statements but reason is not correct explanation for assertion.
c) Assertion is correct statement but reason is wrong statement.
d) Assertion is wrong statement but reason is correct statement

1. Assertion : Both 32g SO_2 and 8g CH_4 have same number of molecules.
Reason: Equal moles of substances have equal number of molecules.

2. Assertion : No of moles of H_2 in 0.224 L of hydrogen is 0.01 mole.
Reason : 22.4 L of H_2 at STP contain 6.023×10^{23} moles.

3. Assertion : The Empirical mass of ethane is half of its molecular mass.
Reason : The empirical formula represents the simplest whole number ratio of various atoms present in a compound.

4. Assertion : Significant figures for 0.200 is 3 whereas for 200 is 1
Reason : Zero at the end or right of a number are significant provided they are not on the right side of the decimal point.

5. Assertion : A solution of table salt in a glass of water is homogeneous
Reason : A solution having same composition throughout is heterogeneous.

6. Assertion: 2p orbitals do not have any radial nodes.
Reason: The number of radial nodes in p-orbitals is given by (n-2) where n is the principal quantum number.

7. Assertion: Electronic configurations of Cr^{3+} (containing 21 electrons) is same as that of Sc (Z=21) i.e., isoelectronic species have the same electronic configuration.
Reason: Orbitals of atoms are filled in order of increasing energy following aufbau principle.

8. Assertion : An orbital cannot have more than two electrons, moreover, if an orbital has two electrons they must have opposite spins.
Reason : No two electrons in an atom can have same set of all the four quantum numbers.

9. Assertion : Number of orbitals in 3rd shell is 9.
Reason : Number of orbitals for a particular value of $n = n^2$.

10. Assertion : Two nodal planes are present in $3d_{xy}$.
Reason : Number of nodal planes = 1

ASSIGNMENT 3-CASE STUDY

Read the passage given below and answer the following questions:
The ideas underlying our modern understanding of thermodynamics and kinetic theory were developed during the nineteenth century. Central to these developments was the discovery that matter reacting chemically does not do so simply between equal masses of the samples involved. We now call the study of this phenomenon 'stoichiometry', defined as: 'the relationship between the amounts of substance that react together, and the products that are formed'.
Another development during the nineteenth century that was central to our modern understanding of the chemical nature of matter was the observation by Avogadro that 'equal volumes of ideal or perfect gases, at the same temperature and pressure, contain the same number of particles, or molecules'. This is now known as Avogadro's law. It provides the motivation to formulate expressions for the quantity of a sample that reacts with another sample. The most notable example of such a formulation is the gram-molecule, which has been used to refer to both a unit and a quantity.

(Reference: Milton Martin J. T. 2011A new definition for the mole based on the Avogadro constant: a journey from physics to chemistry *Phil. Trans. R. Soc.* A.3693993–4003)

The following questions are multiple choice questions. Choose the most appropriate answer:

I. The concept of stoichiometry mentioned in the study is based on the
a. formation of chemical bonds.
b. amount of reactant and product involved in a chemical reaction.
c. idea of temperature and pressure required for the reaction to occur.
d. oxidation states of reactant and product involved.

II. How much gram-molecules of H_2O are produced on combustion of 32 g of methane in excess oxygen?
a. 72 b. 4 c.2 d. 36

III. When an antacid tablet is used, $Ca(OH)_2$ reacts with HCl in the stomach to form inert $CaCl_2$ and H_2O. If the molar mass of $Ca(OH)_2$ is 75 g/mol, how many moles of HCl are required to fully react with 150 g of $Ca(OH)_2$?
a. 4 b. 1 c. 8 d. 2

IV. What must be held constant when applying Avogadro's law?
a. pressure and temperature
b. volume and temperature
c. moles and temperature
d. pressure and volume

ASSIGNMENT 4- NUMERICALS

1. The energy of electron in the first Bohr's orbit is – 13.6 eV. Calculate the energy of electron in the first excited state.

2. Which one has a higher energy, a photon of violet light with wavelength 4000 Å or a proton of red light with wavelength 7000 Å ?

3. Calculate the mass of the photon with wavelength of 3.6 Å.

4. Calculate the wavelength of a tennis ball of mass 60 gm moving with a velocity of 10 m per second. ($h = 6.626 \times 10^{-34}$ kg m^2 s^{-1})

5. Calculate the uncertain it in the velocity of a cricket ball of mass 150 g, if uncertainity in its position is of the order of 1 Å.

6. Dissolving 120 g of urea (Molar mass of urea = 60 g mol^{-1}) in 1000 of water gave a solution of density 1.15 g/mL. Calculate the molarity of the solution.

7. Calculate the percent of carbon, hydrogen and oxygen in ethanol (C2H5OH).

8. The density of 3 M solution of NaCl is 1.25 g mL^{-1}. Calculate molality of the solution.

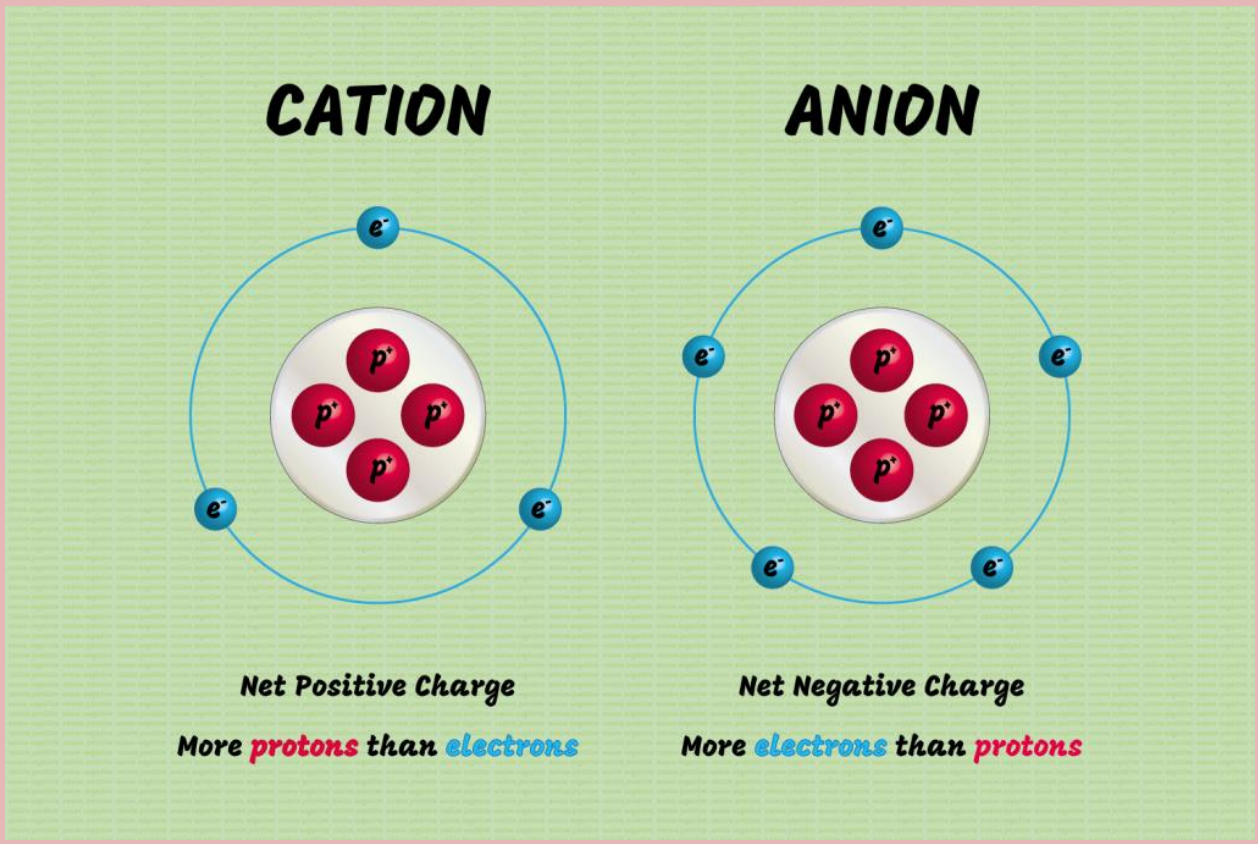
9. Calculate :
   (i) Mass in gram of 5.8 mol N_2O
   (ii) Number of moles in 8.0 g of O_2
   (iii) Molar mass if 11.2 L at STP weigh 8.5 g.

10. A compound contains 4.07% hydrogen, 24.27% carbon and 71.65% chlorine. Its molar mass is

98.96 g. What are its empirical and molecular formulas?

ASSIGNMENT 5- PICTURE AND GRAPHS BASED

1. Reflect upon the given picture and make 20 formulas by the combination of ions.



2. Calculate the molecular mass of the compounds given in the following picture .

cation	anion	compound	cation	anion	compound
Ca^{+2}	Cl^{-1}	$CaCl_2$	Ca^{+2}	SO_3^{-2}	$CaSO_3$
Ba^{+2}	O^{-2}	BaO	Ba^{+2}	PO_4^{-3}	$Ba_3(PO4)_2$
K^{+1}	S^{-2}	K_2S	NH_4^+	S^{-2}	$(NH_4)_2S$
Fe^{+3}	Br^{-1}	$FeBr_3$	Fe^{+3}	SO_3^{-2}	$Fe_2(SO_3)_3$
Cr^{+3}	O^{-2}	Cr_2O_3	NH_4^+	CO_2^{-2}	$(NH_4)_2CO_2$

ASSIGNMENT 6- MIND MAPS

Draw a mind map on any one chapter covered.

ASSIGNMENT 7- FORMULAE BOOKLET

Make a booklet of all the formulaes from the covered chapters.

ASSIGNMENT 8- LAWS AND STATEMENTS

1.Heisenberg uncertainty principle
2.Aufbau principle
3. Laws of chemical combination
4.Hund's rule
5. Pauli exclusion principle

ASSIGNMENT 9-ELECTRONIC CONFIGURATION OF ELEMENTS FROM Z=1-30

ASSIGNMENT 10- ART INTEGRATION ACTIVITY and FILE WORK

ART INTEGRATION ACTIVITY-USING SMART ART REPRESENT ANY ONE OF THE FOLLOWING:
(ON A3 SIZE SHEET FOLLOWED BY LAMINATION)

1. Pauli Exclusion Principle
2. Aufbau Principle
3. Heisenberg Uncertainty Principle
4. Hund's Rule

2. MAKE A CHART SHOWING 3D EFFECT ON THE FOLLOWING TOPICS (ANY 1):-
(a) Concentration Terms
(b) Laws of chemical combination
(c) Electronic configuarion in terms of s,p,d,f (1-30)
(d) Shapes of the orbitals
(e) Spectrum and its types

Conclusion & Self-Reflection

Chemistry is a fundamental science that explains the composition, properties, and transformations of matter. Through practical applications, problem-solving, and experimentation, students develop a deeper understanding of chemical principles and their relevance to everyday life. The study of chemistry enhances critical thinking, analytical skills, and a scientific approach to problem-solving. Whether in organic, inorganic, or physical chemistry, every concept contributes to a broader understanding of the natural world and its interactions.

Self-Reflection:

1. Reflect on your chemistry work and identify your areas of strength, such as problem-solving in stoichiometry or understanding reaction mechanisms, while also recognizing areas needing improvement.
2. Connect theoretical knowledge to real-life applications, such as environmental chemistry, pharmaceuticals, or industrial processes, makes learning more meaningful.
3. Conduct experiments, and analyze the results which fosters logical reasoning and scientific inquiry.

4. Manage your time to get success in chemistry which requires consistent practice and effective particularly in solving numerical problems and balancing chemical equations.
5. Collaborate and Learn from your Mistakes through group discussions, peer learning, and review your mistakes in problem-solving to enhance comprehension and retention of concepts.

By engaging in chemistry work with curiosity, persistence, and reflection, you can improve your understanding and develop a lifelong appreciation for the subject.

Presentation Tips:

- Use a file folder or spiral bind to organize your assignment neatly.
- Make the headings bold and underlined.
- Use proper margins and spacing for neatness.
- Illustrate your work wherever possible.
- Keep your work well-structured and grammatically accurate.

Happy Learning & Have a Great Summer! ☼ 🕮

DARSHAN ACADEMY

Subject Enrichment Assignments - 2025

CLASS: – XI SUBJECT: ECONOMICS

_ General Instructions:

- Submit your assignments in a neatly arranged file with a cover page and table of contents.
- Use A4 sheets and ensure that your handwriting or print is clear and legible.
- Make your work attractive by adding pictures, drawings, or simple borders.
- Complete the work on time and submit it on the first day after the summer vacation.

ASSIGNMENT 1: Assertion and Reasoning

Assertion (A): Microeconomics deals with individual economic units.

Reason (R): It studies the overall economic performance of a country.

a) Both A and R are true, and R is the correct explanation of A.

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

c) A is true, but R is false.

d) A is false, but R is true.

1. Assertion (A): Demand increases with a decrease in price. Reason (R): Law of demand states an inverse relationship between price and quantity demanded.
2. Assertion (A): Utility is the satisfaction derived from consuming a good. Reason (R): Utility is always measurable in monetary terms.
3. Assertion (A): Indifference curves never intersect. Reason (R): Each indifference curve represents a different level of satisfaction.
4. Assertion (A): The demand curve slopes downward from left to right. Reason (R): This is due to the substitution and income effect.
5. Assertion (A): Statistics helps in data interpretation. Reason (R): It is used to make informed economic decisions.
6. Assertion (A): Perfect competition leads to efficient allocation of resources. Reason (R): In perfect competition, firms are price makers.
7. Assertion (A): An increase in the price of substitutes leads to an increase in demand for a good. Reason (R): Consumers shift to cheaper alternatives.
8. Assertion (A): The consumer equilibrium condition is satisfied when MUx/Px = MUy/Py. Reason (R): This ensures maximum satisfaction for the consumer.
9. Assertion (A): The total utility curve initially increases and then starts to decline. Reason (R): This is due to the law of diminishing marginal utility.

ASSIGNMENT 2*: *Multiple Choice Questions

1. Which of the following is NOT a central problem of an economy?

a) What to produce b) How to produce c) How to maximize profit d) For whom to produce

2. The law of demand states that:

a) Demand and price have a direct relationship b) Demand and price have an inverse relationship c) Demand remains constant irrespective of price d) None of the above

3. Consumer equilibrium is achieved when:

a) MUx/Px = MUy/Py b) Total utility is maximized c) Marginal utility is zero d) Both a and b

4. The slope of an indifference curve is called:

a) Marginal Rate of Substitution b) Marginal Cost c) Marginal Revenue d) Marginal Utility

5. When total utility is maximum:

a) Marginal utility is negative b) Marginal utility is zero c) Marginal utility is positive d) Marginal utility is increasing

6. What does an upward movement along the demand curve indicate?

a) Increase in demand b) Decrease in demand c) Increase in quantity demanded d) Decrease in quantity demanded

7. If the price of a commodity falls, demand for its complementary good:

a) Increases b) Decreases c) Remains the same d) First increases, then decreases

8. The study of microeconomics includes:

a) National Income b) Market Demand c) Fiscal Policy d) Inflation

9. The budget line shifts when:

a) Consumer's income changes b) Prices of goods change c) Both a and b d) Neither a nor b

10. The concept of marginal utility was given by:

a) Adam Smith b) Alfred Marshall c) John Keynes d) Paul Samuelson

---

ASSIGNMENT 3: True/False and Fill in the Blanks (10 Questions)

1. True/False: The concept of consumer equilibrium is based on the principle of maximum satisfaction.
2. True/False: An indifference curve is convex to the origin.
3. True/False: The price elasticity of demand is always negative.
4. True/False: Microeconomics deals with aggregate economic variables.
5. True/False: The demand curve for an inferior good slope upward.
6. Fill in the blank: The law of demand states that, other things remaining the same, the quantity demanded of a good _____ when its price falls.
7. Fill in the blank: An indifference curve represents all the combinations of two goods that provide the _____ level of satisfaction to the consumer.
8. Fill in the blank: The point where the budget line is tangent to the indifference curve is called the _____.
9. Fill in the blank: The horizontal summation of individual demand curves gives the _____ demand curve.
10. Fill in the blank: The price elasticity of demand is calculated as the percentage change in quantity demanded divided by the percentage change in _____.

ASSIGNMENT 4: Short Answer Type Questions (8 Questions)

1. Define microeconomics and give an example.
2. Explain the law of demand with the help of a diagram.
3. What is consumer equilibrium? Explain with an example.
4. Differentiate between total utility and marginal utility.
5. What is the significance of an indifference curve?
6. Explain the concept of price elasticity of demand.
7. Discuss the importance of statistics in economics.
8. How does the budget line help in consumer decision-making?

ASSIGNMENT 5: Long Answer Type Questions (8 Questions)

1. Explain the concept of consumer equilibrium using utility analysis.
2. Discuss the law of diminishing marginal utility with an example.
3. Explain the concept of indifference curve analysis and its properties.
4. Describe the relationship between total utility and marginal utility with the help of a diagram.
5. Discuss the determinants of demand.
6. Explain the concept of price elasticity of demand and its measurement.
7. What are the key differences between microeconomics and macroeconomics?
8. Explain the importance and limitations of statistics in economics.

ASSIGNMENT 6: Case-Based Questions (8 Questions)

1. A consumer has a fixed income and can buy two goods. Explain how they make their consumption choice using the budget line and indifference curve.

2. A firm operating in perfect competition sees a rise in demand. What will be the impact on price and output decisions.
3. The government imposes a price ceiling on essential commodities. How it is going to affect using demand and supply curves.
4. A report suggests that an increase in income leads to higher demand for luxury goods. Explain using income elasticity of demand.
5. A company reduces the price of a product and sees a significant rise in sales. Analyse the price elasticity of demand.
6. During inflation, consumers change their consumption patterns. Discuss using consumer choice theory.
7. A new substitute product enters the market. How will it affect the demand for the existing product?
8. Farmers receive subsidies for production. Analyse its effect on market equilibrium.

Case 1: The price of petrol has increased, leading to a decrease in the demand for cars. Answer the following questions:

9. 1. Explain the economic principle behind this situation.

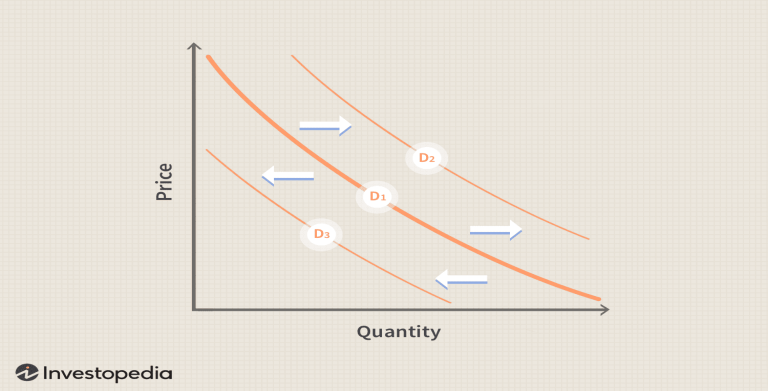
ASSIGNMENT 7: Data Analysis-Based Questions (8 Questions)

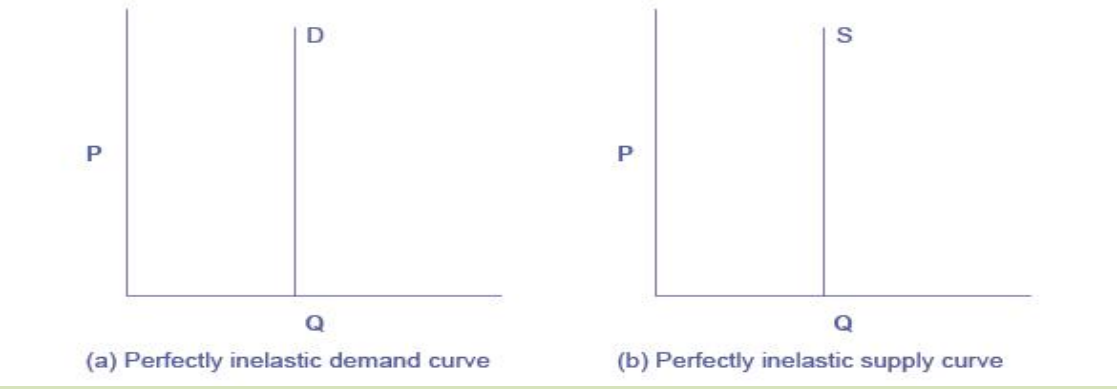
1. Given a table of price and quantity demanded, calculate and interpret the price elasticity of demand.
2. Analyse the given demand schedule and identify trends.
3. Using provided statistics on consumer spending, interpret the impact of price changes.
4. A dataset shows the relationship between income and expenditure. Analyse using Engel's Law.
5. Given a production cost dataset, analyse total, fixed, and variable costs.
6. A table provides data on market supply changes. Identify key factors influencing supply.
7. Use a given consumer preference dataset to plot an indifference curve.
8. A demand and supply table is given. Identify equilibrium price and quantity.

ASSIGNMENT 8: Numerical-Based Questions (8 Questions)

1. If a consumer's income is ₹10,000 and they spend 40% on good X and 60% on good Y, how much is spent on each?
2. Given price and quantity changes, calculate price elasticity of demand.
3. A consumer's utility function is given. Calculate marginal utility.
4. Find the equilibrium point given the demand and supply equations.
5. A budget line equation is given. Identify possible consumption bundles.
6. Compute the total and marginal utility from given data.
7. Calculate consumer surplus from a given price-demand function.
8. Given statistical data on income and demand, find the income elasticity of demand.

ASSIGNMENT 9: NCERT and Picture-Based Questions (10 Questions)

1. Draw the diagram of an indifference curve. Identify and explain its properties.
2. With the help of a schedule determine consumer equilibrium.
3. Analyse a Demand curve and show the impact of price change.
4. Study a production possibility curve and explain economic choices.
5. Study a real-world demand-supply scenario of any product and interpret market equilibrium.
6. Compare the given two demand curves in a given graph and explain the shift.
7. 

8. Identify the type of elasticity from the provided graph.
9. 

Study a newspaper article on inflation and relate it to demand analysis.
10. Refer to a statistical table on income levels and discuss trends using economic principles.

ASSIGNMENT 10: PROJECT WORK

As assigned in the class.

DARSHAN ACADEMY

Subject Enrichment Assignments - 2025

CLASS: – XI SUBJECT: ENGLISH CORE

General Instructions:

- Submit your assignments in a neatly arranged file with a cover page and table of contents.
- Use A4 sheets and ensure that your handwriting or print is clear and legible.
- Make your work attractive by adding pictures, drawings, or simple borders.
- Complete the work on time and submit it on the first day after the summer vacation.

ASSIGNMENT 1: Note Making

1. How does television affect our lives? It can be very helpful to people who carefully choose the shows that they watch. Television can increase our knowledge of the outside world; there are high quality programs that help us understand many fields of study, science, medicine, the different arts and so on. Moreover, television benefits very old people, who can't leave the house, as well as patients in hospitals. It also offers non-native speakers the advantage of daily informal language practice. They can increase their vocabulary and practise listening.

2. On the other hand, there are several serious disadvantages of television. Of course, it provides us with a pleasant way to relax and spend our free time, but in some countries people watch television for an average of six hours or more a day. Many children stare at the TV screen for more hours a day than they spend on anything else, including studying and sleeping. It's clear that TV has a powerful influence on their lives and that its influence is often negative.

3. Recent studies show that after only thirty seconds of television viewing, a person's brain 'relaxes' the same way that it does just before the person falls asleep. Another effect of television on the human brain is that it seems to cause poor concentration. Children who view a lot of television can often concentrate on a subject for only fifteen to twenty minutes. They can pay attention only for the amount of time between commercials.

4. Another disadvantage is that television often causes people to become dissatisfied with their own lives. Real life does not seem so exciting to these people. To many people, television becomes more real than reality and their own lives seem boring. Also, many people get upset or depressed when they can't solve problems in real life as quickly as television actors seem to.

5. Before a child is fourteen years old, he or she views eleven thousand murders on the TV. He or she begins to believe that there is nothing strange about fights, killings and other kinds of violence. Many studies show that people become more violent after viewing certain programs. They may even do the things that they see in a violent show.

(a) One the basis of your reading of the above passage, make notes on it using headings and subheadings. Use recognizable abbreviations (minimum four) and a format you consider suitable. Supply a suitable title to it. (5)

(b) Make a summary of the above passage in about 80 words. (3)

ASSIGNMENT 2: Factual Passage

1. The year 2005 was celebrated the world over as the centenary of the discovery of the Theory of Relativity by Albert Einstein. Although Einstein published three major results during 1905, he became famous only 14 years later, or after 6 November 1919. The story of Einstein is an absorbing account of how a scientific achievement caught the popular imagination and made international headlines.

2. It all began with Isaac Newton, who while propounding his universal law of gravitation, wondered whether, like all material objects in the universe, light is subject to gravitational attraction. Would a ray of light skirting a massive body bend its path? This was the question Newton had posed but did not answer. He may have felt that the effect, if any, would be too small to measure with the resources? available to him.

3. In 1801, Johann Georg von Soldner carried out a calculation by assuming that light was made of tiny particles (Newton had called them corpuscles) which would be attracted by a massive body. It would, therefore, bend the ray slightly. How slightly? A ray of light from a distant star passing by the sun would be bent by an angle less than four thousandth part of a degree. This conclusion was of academic interest since astronomers of the day were not capable of measuring the effect.

4. After proposing special relativity, Einstein undertook the more ambitious task of producing a general theory of relativity that incorporated in it the phenomenon of gravity. His early attempts led him to the conclusion no different from Soldner's as far as the bending of light was concerned. By 1911, he felt confident of this new theory and urged astronomers to verify it.

5. The astronomers, too, were by this time confident of being able to make the required measurements. This meant checking if the direction of a star changed slightly when it was passing behind the sun. But how does one see a star so close to the sun? The answer to that is when the sun is totally eclipsed.

6. Total solar eclipses are rare events visible from very limited zones on the earth. In 1912, Argentinian astronomers went to Brazil to make the measurements, only to be thwarted by a cloudy sky. A second attempt by German astronomers in 1914 to observe the eclipse in Crimea was prevented by the onset of the First World War. Nevertheless, these aborted attempts turned out to be fortunate from Einstein's point of view.

7. By 1915, Einstein realized that he had made a mistake in calculations and the revised theory, now called the General Theory of Relativity, gave a different answer – that is, the bending angle was twice that given by Soldner based on Newton's theory.

8. General relativity was a highly mathematical theory, beyond the grasp of most astronomers. Very few scientists at that time fully appreciated its notions of curved space and time. Fortunately for Einstein, though, there was one astronomer who did: Arthur Stanley Eddington at Cambridge, England. Eddington pressed for an expedition to measure this effect during the eclipse due in 1919. For better chances of success two spots were proposed for observation: one in Sobral in Brazil, and the other in the Island of Principe in Spanish Guinea in Africa. Eddington, a quaker, faced the hurdle of possible conscription and detention, but his colleagues made sure that it did not happen.

9. The war ended in 1918, leaving very little time for completing the preparations. The team going to Sobral led by the Greenwich astronomer, Crommelin, had taken large 10 – inch lenses for accurate observations. However, the two makeshift telescopes made from them developed technical problems and in the end, Crommelin had to fall back on a four-inch telescope. Eddington had opted for the Island of Principe as it had a better weather record, but it turned rainy and cloudy on that day. Fortunately, the cloud cover cleared at the right time for Eddington to take necessary photographs of the starfield after the experiment for comparison, but he couldn't because of a local strike of steamship operators which forced him to return home early.

10. Despite all these problems, the data was analysed and presented on 6 November 1919, at the Royal Society in London, to a crowded hall of scientists against the backdrop of a portrait of Isaac Newton. Would the results show him (and Soldner) to be right or would the new (and weird) theory of Einstein be favoured? The suspense was broken by Astronomer Royal Sir Frank Dyson whose account, followed by reports from Eddington and Crommelin, upheld Einstein's prediction. The audience felt the thrill of history being made.

11. Despite the euphoria, several scientists were sceptical and would have liked more data. They were right. The observational errors were much larger than they realised at the time and did not warrant a clear-cut judgment on that day. Only in the 1970s did astronomers using radio and microwave observations to obtain a clear decision in favour of Einstein.

12. Hindsight informs us that luck intervened on several occasions during the episode. Einstein's earlier wrong prediction escaped detection. Be that as it may, the 1919 meeting consecrated Einstein as the greatest scientist of the last century.

2.1 (i) Complete the sentences. 10m

a. Einstein had twofold achievements to his credit. They are the …… and ……

b. The inability of the astronomers to make their measurement was a blessing in disguise for Einstein because …….

c. Not many could respect the idea of curved space and time because ……

(ii) Which words in the passage are antonyms of the following:

a. uninteresting (Para 1)

b. normal/usual (Para 6)

c. late (Para 9)

2.2 Choose the correct options.

(i) Johann von Soldner's discovery only gathered academic interest because

a. the common man was unaffected.

b. it was difficult for him to prove his discovery.

c. it was not possible to measure the outcome.

d. all the above options

(ii) Lady Luck was shining brightly on Einstein because

a. the weather had favoured his wrong calculation.

b. there were observation errors that went undetected.

c. he was acclaimed as the greatest scientist of the last century.

d. all the above options

(iii) German astronomers attempted to observe the eclipse in Crimea in

a. 1912 b. 1913 c. 1914 d. 1915

(iv) By 1915

a. Eddington pressed for an expedition to measure the effect during the eclipse.

b. Einstein realized that he had made a mistake in calculations the war ended.

d. the data was analysed and presented at the Royal Society in London.

(v) The word "euphoria" means

a. to get pleasure from something.

b. to praise somebody/something very highly

c. an extremely strong feeling of happiness and excitement.

d. an indirect word or phrase that people often use to refer to something embarrassing or unpleasant, sometimes to make it seem more acceptable than it really is.

(vi) The 1919 meeting consecrated

a. Einstein as the greatest scientist of the last century.

b. Soldner as the greatest scientist of the last century.

c. Crommelin as the greatest scientist of the last century.

d. Sir Frank Dyson as the greatest scientist of the last century.

ASSIGNMENT 2: Poster Making

Task: Design a creative poster on the following topics:

1. "Courage in the Face of Adversity" (Inspired by *We're Not Afraid to Die... If We Can All Be Together*)
2. "A Journey to Self-Discovery"

Ensure your poster is visually appealing with appropriate colors, slogans, and images.

ASSIGNMENT 3: Speech Writing

Task: Write a speech on the following topics (Word Limit: 150-200 words):

1. "Honesty and Integrity: The Mark of True Character" (Inspired by *The Summer of the Beautiful White Horse*)

2. "The Spirit of Adventure and Exploration" (Inspired by *We're Not Afraid to Die... If We Can All Be Together*)

Make your speech engaging by including real-life examples, rhetorical questions, and a strong conclusion.

ASSIGNMENT 4: Prose Questions

(Answer the following in 120-150 words each)

1. *The Summer of the Beautiful White Horse* - How do Aram and Mourad's actions reflect the themes of morality and childhood innocence?
2. *We're Not Afraid to Die... If We Can All Be Together* - How does the story depict resilience and family bonding in times of crisis?

ASSIGNMENT 5: Poetry Questions

"The cardboard shows me how it was
When the two girl cousins went paddling,
Each one holding one of my mother's hands,
And she the big girl—some twelve years or so."

1. What is the significance of the word "cardboard" in the given extract?
2. What does "the two girl cousins" tell us about the setting of the photograph?
3. How does the poet describe her mother's childhood in these lines?
4. What emotions does the poet convey through these lines?
5. How does this stanza reflect the theme of *time and loss* in the poem?

ASSIGNMENT 6: Supplementary Reader

Diary Entry: Imagine you are Mourad. Write a diary entry expressing your thoughts and emotions after returning the horse. Reflect on your adventure, your love for horses, and your sense of morality. (Word Limit: 150-200 words) – (The Summer of the Beautiful White Horse)

ASSIGNMENT 7: Notice Writing

Task: Draft a notice for your school notice board on the following topics:

1. Your school is organizing a literary event titled *Beyond Boundaries: Stories and Struggles*, integrating themes from *The Summer of the Beautiful White Horse*, *We're Not Afraid to Die... If We Can All Be Together*. Draft a notice inviting students to participate.
2. As the Cultural Secretary, draft a notice for a creative writing workshop focusing on personal experiences and reflections, inspired by *The Summer of the Beautiful White Horse*.

ASSIGNMENT 8: Grammar- Gap Filling

1. Animals (a)---------- been helpful to man (b)--------many ways. They help us in crushing oil, drawing water (c)--------- carrying load. They have been actively involved in transportation (d)---------. They have been (e)---------part of the lives of human beings, (f)---------- had always been dependent on animals in one way or the other.

(a) (i) Has (ii) have (iii) had (iv) head

(b) (i) in (ii) for (iii) from (iv) with

(c) (i) but (ii) and (iii) or (iv) so
(d) (i) to (ii) too (iii) for (iv) two
(e) (i) an (ii) a (iii) the (iv) on
(f) (i) which (ii) when (iii) whom (iv) who

2. Mathematics is (a) ---------- old as civilization itself and is one (b) ------- the most useful (c) ---------- fascinating branches of human knowledge. It encompasses (d) ----------topics of study and as such it (e) --------- difficult to define the term “mathematics” which (f) --------- from a Greek word meaning “inclined to learn “,
(a) (i) so (ii) an (iii) as (iv) the
(b) (i) off (ii) for (iii) upon (iv) of
(c) (i) so (ii) but (iii) yet (iv) and
(d) (i) various (ii) many (iii) much (iv) few
(e) (i) is (ii) was (iii) has (iv) had
(f) (i) comes (ii) came (iii) come (iv) coming

ASSIGNMENT 9: Reordering of the words

1. (a) of mankind / reading is / one of / pleasures / the greatest
(b) we / enjoy / the / much more / borrowed ones / our own books / reading / than
(c) book / care / must be / with / a borrowed / treated
(d) book / afraid of / you should / writing notes on / not be / your own
(e) should begin / one / a private library / one’s youth / building / in

2. (a) two hands / the sound / hear / of / you can /
(b) the / now / one hand / show me / sound of /
(c) did / succeed / tried / not / but / Sethu /

ASSIGNMENT 10: Creative Writing

"A Letter to My Future Self"
Task: Write a heartfelt letter to your future self (10 years from now). Reflect on your current dreams, fears, values, and the lessons you have learned. End with a message of hope and advice for your future self. - This helps you explore self-awareness and long-term aspirations.

Happy Learning & Have a Great Summer!

DARSHAN ACADEMY

Subject Enrichment Assignments - 2025

CLASS: XI SUBJECT: INFORMATICS PRACTICE

General Instructions:

- Submit your assignments in a neatly arranged file with a cover page and table of contents.
- Use A4 sheets and ensure that your handwriting or print is clear and legible.
- Make your work attractive by adding pictures, drawings, or simple borders.
- Complete the work on time and submit it on the first day after the summer vacation.

WORKSHEET-1

1. What is a computer system?
2.Name the basic components of the Computer System.
3.Draw the basic block diagram of a Computer System.

4. What do you understand by given terms and give suitable examples
   a. Input unit b. output unit

WORKSHEET-2

1. Why do you need the computer memory? Give the units to measure it.
2. What are the types of memory?
3. What is the purpose of cache memory?
4. Differentiate between RAM and ROM primary memories/main memory.
5. What is a software?

WORKSHEET-3

1.What is system software? Name the examples of system software.
2. Define the terms:
OS (Operating System), System utilities, Device Drivers
3.What is application software? Name the purpose of it.
4. Explain the terms: i) Data Storage ii) Data Retrieval
5. General purpose software and Customized /tailored software, how do they differ?

WORKSHEET-4

1. Differentiate between
a. proprietary software,
b. Free, OSS (Open Source Software)

2. Which type of memory needed to do
c. To store data permanently
d. To execute the program faster
e. To store the instructions which cannot be over written.

2. Name the browser to access the internet.

3. Write the category of general-purpose software given below.
a. Photoshop
b. GIMP
c. Mozilla
d. web browser
e. iTunes

WORKSHEET-5

1. Differentiate between
   a. Identifiers and Keywords
   b. High Level Language and Low-Level Language

2. Which type of operator are these. Define.
   a. IN and NOT IN
   b. =+, = =, !=
   c. //, **, +

3. Name the different programming modes of python.

4. Write the difference between script and interactive mode of python programming.

WORKSHEET-6

1. Write the purpose of following methods.
   i) print ii) input

2. What will be the output of the given python statement?
i) print ('English','Maths','Physics', sep='@')
ii) print ('Book','Library','School', sep='@', end='!')

3. What should be avoided when naming an identifier in Python?
(i) Using reserved keywords (ii) Using underscores
(iii) Using lowercase letters (iv) Using digits after the first character

4. 1 6 Which of the following is a correct way to calculate the average of marks in three subjects in Python?
   (i) avg = (marksMaths + marksEnglish + marksIP) / 3
   (ii) avg = marksMaths + marksEnglish + marksIP / 3
   (iii) avg = marksMaths + marksEnglish + marksIP * 3
   (iv) avg = (marksMaths + marksEnglish + marksIP) * 3

WORKSHEET-7

Q.1 When was Python released?
Q.2 Who developed Python?
Q.3 Which two languages contributed to Python as a Programming Language
Q.4 Is Python an Object-Oriented Language?
Q.5 Python is an interpreted language". What does it mean to you?
Q.6 What does a cross-platform language mean?
Q.7 Python is a Free and Open-Source language. What do you understand by this feature?
Q.8. What are the advantages of Python

Q.9 What are the limitations of Python?

WORKSHEET-8

1. Which of the following are not valid strings in Python?
(a) “Hello” (b) „Hello“ (c)”Hello“ (d) „Hello” (e) {Hello}

2. Write Instructions in python to get the following result: (Do it in both interactive mode and script mode)
I am a student of KV Barabanki
I live in Barabanki and I love Barabanki.
Barabanki is 20 KM away from Lucknow

3. What is None literal in Python?
4. What is the error in following code: x, y =7 ?
5. What will the following code do: a=b=18 ?
6. Following code is creating problem X = 0281, find reason.

WORKSHEET-9

1. Find the error in the following code and rectify it.

- temp=90 Print temp
- a=12
- b = a + b
- print(a And b)
- print(“x=”x)
- a, b, c=2, 8, 4
- print(a, b, c)
- c, b, a = a, b, c
- print(a; b; c)
- x = 23
- 4 = x
- else = 21-4
- y = x +5
- print(x,y)
- a=input(“Value: “)
- b = a/2
- print(a, b)
- print(x = y = 5)

WORKSHEET-10

TOPICS:- Basic of Python programming

1. Which of the following are syntactically correct strings? State reason.
(a)” Python is nice Language”
(b) „He called me “Friend!” when he came“
(c) “Very Good“
(d) „This is a good book“
(e) “Namaste
(f) “I liked „Harry Potter“ very much”

2. What is the error in following Python program with one statement? print(“My name is : “, name) suggest a solution.

3. Predict the output of the following:

```
x,y=7,2
x,y,x=x+1,y+3,x+10
print(x,y)
```

4. Predict the output of the following:

```
name='Hari'
age=18
print(name,", you are ",age," now but ",end="")
print("You will be ",age+1," next Year")
```

DARSHAN ACADEMY

Subject Enrichment Assignments - 2025

CLASS: – XI SUBJECT: MATHEMATICS

GENERAL INSTRUCTIONS:

- Submit your assignments in a neatly arranged file with a cover page and table of contents.
- Use A4 sheets and ensure that your handwriting or print is clear and legible.
- Make your work attractive by adding pictures, drawings, or simple borders.
- Complete the work on time and submit it on the first day after the summer vacation.

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ASSIGNMENT 1 : SET THEORY

Q1. Write the following sets in the roster from

(i) $A = \{x : x \in R, 2x + 11 = 15\}$

(ii) $B = \{x \mid x^2 = x, x \in R\}$ (iii) $C = \{x : x \text{ is a positive factor of a prime number p}\}$

Q2 Write the following sets in the roster form.

(i)$A = \{x \mid x \text{ is a positive integer less than 10 and } 2x - 1 \text{ is an odd number}\}$

(ii) $C = \{x : x^2 + 7x - 8 = 0, x \in R\}$

Q3 If X and Y are subsets of the universal set U, then show that

(i) $Y \subset X \cup Y$ (ii) $X \cap Y \subset X$ (iii) $X \subset Y \Rightarrow X \cap Y = X$

Q4 State which of the following statements are true and which are false. Justify your answer.

(i) $35 \in \{x \mid x \text{ has exactly four positive factors}\}$. (ii) $128 \in \{y \mid \text{the sum of all the positive factors of y is } 2y\}$

(iii) $3 \notin \{x \mid x^4 - 5x^3 + 2x^2 - 112x + 6 = 0\}$ (iv) $496 \notin \{y \mid \text{the sum of all the positive factors of y is } 2y\}$.

Q5 Given $L = \{1, 2, 3, 4\}$, $M = \{3, 4, 5, 6\}$ and $N = \{1, 3, 5\}$ Verify that $L - (M \cup N) = (L - M) \cap (L - N)$.

ASSIGNMENT 2 : SET THEORY

Q1 If A and B are subsets of the universal set U, then show that (i) $A \subset A \cup B$ (ii) $A \subset B \Leftrightarrow A \cup B = B$

(iii) $(A \cap B) \subset A$ by giving example.

Q2 Given that $N = \{1, 2, 3, \ldots, 100\}$. Then write (i) the subset of N whose elements are even numbers.

(ii) the subset of N whose element are perfect square numbers.

Q3 If $X = \{1, 2, 3\}$, if n represents any member of X, write the following sets containing all numbers represented by

(i) 4n (ii) n + 6 (iii)2 n (iv) n – 1

Q4 If $Y = \{1, 2, 3, \ldots 10\}$, and a represents any element of Y, write the following sets, containing all the elements satisfying the given conditions. (i) $a \in Y$ but $a^2 \notin Y$ (ii) $a + 1 = 6, a \in Y$

Q5 A, B and C are subsets of Universal Set U. If $A = \{2, 4, 6, 8, 12, 20\}$ $B = \{3, 6, 9, 12, 15\}$, $C = \{5, 10, 15, 20\}$ and U is the set of all whole numbers, draw a Venn diagram showing the relation of U, A, B and C.

ASSIGNMENT 3 : SET THEORY
WORD PROBLEMS

Q1 In a survey of 600 students in a school, 150 students were found to be taking tea and 225 taking coffee,100 were taking both tea and coffee. Find how many students were taking neither tea nor coffee?

Q2 In a group of students, 100 students know Hindi, 50 know English and 25 know both. Each of the students knows either Hindi or English. How many students are there in the group?

Q3 A market research group conducted a survey of 1000 consumers and reported that 720 consumers like product A and consumers like product B, what is the least number that must have liked both products?

Q4 In a committee, 50 people speak French, 20 speak Spanish and 10 speak both Spanish and French. How many speak at least one of these two languages?

Q5 There are 200 individuals with a skin disorder, 120 had been exposed to the chemical C1, 50 to chemical C2 and 30 to both the chemicals C1 and C2. Find the number of individuals exposed to

(i) Chemical C1 but not chemical C2
(ii) Chemical C2 but not chemical C1
(iii) Chemical C1 or chemical C2

ASSIGNMENT 4: SET THEORY

Q1 If A = {3, 6, 9, 12, 15, 18, 21}, B = { 4, 8, 12, 16, 20 }, C = { 2, 4, 6, 8, 10, 12, 14, 16 }, D = {5, 10, 15, 20 }; find

(i) A – B (ii) A – C (iii) A – D (iv) B – A
(v) C – A (vi) D – A (vii) B – C (viii) B – D
(ix) C – B (x) D – B (xi) C – D (xii) D – C

Q2 Draw appropriate Venn diagram for each of the following :

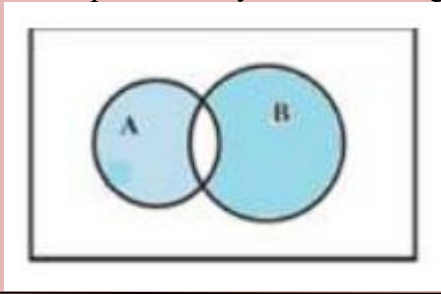
(i) (A∪ B), (ii) A∩ B, (iii) (A ∪ B)', (iv) A∩ B'

Q3In a survey of 400 students in a school, 100 were listed as taking apple 150 as taking orange juice and 75 were listed as taking both apple as well as orange juice. Find how many students were taking neither apple juice nor orange juice.

Q4 If A = { 1, 3, 5}, how many elements has P(A)?

Q5 Are sets A = {1, 2, 3, 4}, B = { x : x∈ N and $5 \leq x \leq 7$} disjoint? Justify your answer.

Q6What is represented by the shaded regions in Venn-diagrams?



ASSIGNMENT 5 : RELATIONS AND FUNCTIONS

MCQ QUESTIONS

Q1 If A = {1, 2, 4}, B = {2, 4, 5}, C = {2, 5} then (A – B) × (B – C)

(a) {(1, 2), (1, 5), (2, 5)} (b) {1, 4}

(c) {1, 4} (d) None of these.

Q2 If R is a relation on set A = {1, 2, 3, 4, 5, 6, 7, 8} given by xRy as y = 3x, then R = ?

(a) {(3, 1), (6, 2), (8, 2), (9, 3)} (b) {(3, 1), (6, 2), (9, 3)}

(c) {(3, 1), (2, 6), (3, 9)} (d) None of these.

Q3 Let A = {1, 2, 3}, B = {4, 6, 9} if relation R from A to B defined by x is greater than y. then the range of R is -

(a) {1, 4, 6, 9} (b) {4, 6, 9} (c) {1} (d) None of these.

Q4 Domain of f(x) = is $\sqrt{4x - x^2}$

(a) R – [0, 4] (b) R – (0, 4) (c) (0, 4) (d) [0, 4].

Q5 If $[x]^2 - 5[x] + 6 = 0$, where [.] denote the greater integer function then -

(a) $x \in [3, 4]$ (b) $x \in (2, 3]$ (c) $x \in [2, 3]$ (d) $x \in [2, 4)$.

ASSIGNMENT 6: RELATIONS AND FUNCTIONS

Q1 If P = {1,3}, Q = {2,3,5}, find the number of relations from P to Q.

Q2 If R = {(x,y): x,y ∈ Z, $x^2 + y^2 = 64$}, then, Write R in roster form.

Q3 Which of the following relations are functions? Give reason.

1. R = { (1,1), (2,2), (3,3), (4,4), (4,5)}
2. R = { (2,1), (2,2), (2,3), (2,4)}
3. R = { (1,2), (2,5), (3,8), (4,10), (5,12), (6,12)}

Q4 If A and B are finite sets such that n(A) = 5 and n(B) = 7, then find the number of functions from A to B.

Q5 If $f(x) = x^2 - 3x + 1$ find $x \in R$ such that f (2x) = f (x)

ASSIGNMENT 7 : RELATIONS AND FUNCTIONS

Q1 Find the domain of the real function ,$f(x)=\sqrt{x^2 - 4}$

Q2 Find the domain of the function ,$f(x)=\frac{x^2+2x+3}{x^2-5x+6}$

Q3 Find the range of the following functions.

(i) $f(x)=\frac{1}{4-x^2}$

(ii) $f(x) = x^2 + 2$

Q4 Find the domain of the relation, $R = \{(x, y): x, y \in Z, xy = 4\}$

Q5 Let $A = \{1,2,3,4\}$, $B = \{1,4,9,16,25\}$ and R be a relation defined from A to B as,

$R = \{(x, y): x \in A, y \in B \text{ and } y = x^2\}$

(i)Depict this relation using arrow diagram.
(ii)Find domain of R.
(iii)Find range of R.
(iv)Write co-domain of R.

ASSIGNMENT 8 : RELATIONS AND FUNCTIONS

Q1 If $A = \{2,4,6,9\}$ $B = \{4,6,18,27,54\}$ and a relation R from A to B is defined by $R = \{(a,b): a \in A, b \in B,$ a is a factor of b and $a < b\}$, then find in Roster form. Also find its domain and range.

Q2 Find the domain and range of, $f(x) = |2x – 3| – 3$

Q3 Draw the graph of the Greatest Integer function

Q4 Find the domain and range of the following real functions

(i) $f(x)=\frac{x^2-1}{x-2}$ (ii) $f(x)=\frac{x+1}{x-2}$

Q5 Find the domain of the function $f(x)=\frac{1}{\sqrt{9-x^2}}$

ASSIGNMENT 9 : TRIGONOMETRIC FUNCTIONS

Q1 Find the angle between the hour-hand and minute hand when the time is 7:20 AM

Q2 If ‘x’ lies in the III quadrant and $\sin x = -2\sqrt{6}/5$, find the values of Secx and Cotx.

Q3 If $\sin\alpha+\sin\beta=a$ and $\cos\alpha+\cos\beta=b$ then find the values of $\cos(\alpha+\beta)$ and $\sin(\alpha+\beta)$.

Q4 If $\sin 2A = x\sin 2B$, then show that $\tan(A+B)/\tan(A–B) = x+1/x-1$

Q5 Show that $\cot 4x (\sin 5x + \sin 3x) = \cot x (\sin 5x – \sin 3x)$

Q6 The larger hand of a big clock is 35 cm long. How many cm does its tip move in 9 minutes?

Q7 If $\cot x=12/5$ and x lies in the second quadrant, find the values of other five trigonometric functions.

ASSIGNMENT 10: Project work

Q1 Prepare a chart on Graph of different trigonometric functions.

Q2 Do Activity on the following topics in your activity file :-

Activity-1
Objective: To find the number of subset of a given set and verify that if a set has n number of elements, then the total number of subsets is 2^n

Activity-2
Objective: To verify that for two sets A and B, n (A×B) = pq and the total number of relations from A to B is 2^{pq} , where n(A) = p and n(B) = q.

Activity-3
Objective: To identify a relation and a function.

Activity-4
Objective: To plot the graph of sinx, sin2x,2sinx and sin x/2 using same coordinate axes.

Q3 Do all the N.C.E.R.T examples of set theory, relations and functions and trigonometric functions in your class notebook.

DARSHAN ACADEMY

Subject Enrichment Assignments - 2025

CLASS: – XI SUBJECT: PHYSICAL EDUCATION

General Instructions:

- Submit your assignments in a neatly arranged file with a cover page and table of contents.
- Use A4 sheets and ensure that your handwriting or print is clear and legible.
- Make your work attractive by adding pictures, drawings, or simple borders.
- Complete the work on time and submit it on the first day after the summer vacation.

Project work

The students are required to undertake one compulsory project during this academic year as per CBSE guidelines. The project would involve the use of different methods of enquiry and related skills. The objective of this project is to familiarize the students with:

- Practical-1. labelled diagram of 400mt Track and Field with computations, also make a flow chart of a track and field events.
- Practical-2 Research changing trends in sports and games in terms of changes in surface, wearable gears, equipment, technological advancements.
- Practical -3 Find out any one game/sport IOA recognized of your choice and research.

- Following topics:

a.History of the game

b . Fundamental skills

c. Terminologies

d . Famous players and awards

e . court/ground specifications

f Rules and Regulations

g. Equipments

Art Integrated

Make a poster on Physical health, Mental health , social and emotional health. (Any one)

Physical activity

Take a part in any form of physical activity for one week (the activity can beany sports, simple jogging, walking, recreational activity, adventure sports etc.)after a week fill the table given below

- Name of the activity
- What motivated you to choose this activity ?
- How do you feel after participating in this activity?
- Would you like to continue participation in this activity?
- If your response to the above question is Yes or No give a plausible reason.

Note: Holiday homework should be colourful and presentable.

DARSHAN ACADEMY

Subject Enrichment Assignments - 2025

CLASS: – XI SUBJECT: PHYSICS

General Instructions:

- Submit your assignments in a neatly arranged file with a cover page and table of contents.
- Use A4 sheets and ensure that your handwriting or print is clear and legible.
- Make your work attractive by adding pictures, drawings, or simple borders.
- Complete the work on time and submit it on the first day after the summer vacation.

CH :- UNITS , DIMENSION & KINEMATICS

WORKSHEET-1

Multiple Choice Questions (MCQs)

1.The displacement (in metres) of a body varies with time t (in second) as $x = t^2 - 2t - 3$. The displacement is zero for a positive value of t which is equal to 1A

(A) 1s
(B) 4 s
(C) 3 s
(D) 2 s

2.If A = B + C and the magnitudes of $\vec{A} \cdot \vec{B}$ and $\vec{C}$ are 5, 4 and 3, respectively, then the angle between $\vec{A}$ and $\vec{C}$ is

(A) $\sin^{-1}(35)$
(B) $\cos^{-1}(35)$
(C) $\cos^{-1}(45)$
(D) $\sin^{-1}(45)$

3.When a body is dropped from a tower, then there is an increase in its

(A) weight
(B) acceleration
(C) velocity
(D) gravitational potential energy

4. Which of the following is not the name of physical quantity?

(a) Kilogram
(b) Density
(c) Impulse
(d) Energy

5.The weight of a body is 12g. This statement is not correct because

(a) The correct symbol for the unit of weight has not been used.
(b) The correct symbol for gram is gm.
(c) The weight should be expressed in kg.
(d) Of some reason other than those given above.

6.The density of a liquid is 13.6 g cm^{-3}. Its value ip S.I. is
(a) 13.6 kgm^{-3}
(b) 136 kgm^{-3}
(c) 13600 kgm^{-3}
(d) 1360 kgm^{-3}

7.If the unit of force and length are doubled, the unit of energy will be
(a) 1/2 times
(b) 2 times
(c) 4 times
(d) 1/4 times

8.Which of the following have the same dimensions as v2r Where v is the speed of the particle describing a circular path of radius r.
(a) Force
(b) Impulse
(c) Acceleration
(d) Momentum

9.Which of the following have the same dimensions as Plank's constant?
(a) Moment of momentum
(b) Moment of fierce
(c) Momentum/distance
(d) Force/distance

10.Which of the following is a dimensionless quantity, even when the measured quantity is not dimensionless?
(a) absolute error
(b) Gross error
(c) Relative error
(d) experimental error

11.The zero error belongs to the category of:
(a) constant error
(b) personal error
(c) accidental error
(d) instrumental error

12.The least count of a stop watch is 0.1s. The time of 20 oscillations of the pendulum is found to be 20s. The percentage error in the time period is
(a) 0.25%
(b) 0.75%
(c) 0.50%
(d) 1.0%

13.The value of 0.98 – 0.989 with regard to the significant digit will be:
(a) 0.001
(b) 0.010×10^{-1}
(c) 0.01×10^{-1}
(d) None of these

14.What is the number of significant figures in $(3.20 + 4.80) \times 10^5$?
(a) 2
(b) 3
(c) 4
(d) 5

15.Which of the following numerical values has three significant figures?
(a) 5.055
(b) 0.050
(c) 50.50
(d) 0.500

16.Which of the following is not the name of a physical quantity?
(a) Kilogram
(6) Density
(c) energy
(d) Impulse

17.A laser signal is sent towards the moon with a speed of light C and returns after a time f seconds. The distance of the moon from the observer is
(a) ct
(b) ct/2
(c) ct^{-2}
(d) ct^{-1}

18.The volume of a cube in m3 is numerically equal to its surface area in m^2. The volume of the cube is
(a) $64m^3$
(b) $1000m^3$
(c) $216m^3$
(d) $512m^3$

19.The weight of a body is 12g. This statement is not correct because:
(a) the correct symbol for the unit of weight has not been used
(b) the correct symbol for gram is gm.
(c) the weight should be expressed in kg.
(d) None of the above

20.Give that the displacement of a particle is given by $x = A^2 \sin^2 kt$, where t denotes the time. The unit of k is
(a) radian
(b) metre
(c) hertz
(d) second

21.Which of the following is the unit of molar gas constant?
(a) $JK^{-1} mol^{-1}$
(b) J
(c) JK^{-1}

(d) J mol^{-1}

22.The dimensional formula for angular momentum is same as that for:
(a) torque
(b) Plank's constant
(c) gravitational constant
(d) impulse

23.Which of the following physical quantity is dimensionless?
(a) angle
(b) specific gravity
(c) strain
(d) all of these

Two statements are given- one labelled **Assertion (A)** and other labelled **Reason (R).** Select the correct answer to these questions from the options is as given below.
(A) If both Assertion and Reason are true and Reason is the correct explanation of Assertion.
(B) If both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
(C) If Assertion is true but Reason is false.
(D) If both Assertion and Reason are false.

1.Assertion (A): 1 kg = 10^9 µg
Reason (R): 1 kg = 10^3 g and 1 g = 10^6 µg.

2. Assertion(A): Direction of retardation is opposite to that of velocity.
Reason (R): Retardation is equal to the rate of decrease of speed with time.

3. Assertion(A): Mass and energy are not conserved separately. They are conserved as a single entity called mass- energy.
Reason (R): Mass and energy are inter-convertible.

WORKSHEET-2

1. Under what condition is the relation $s = vt$ correct

2.Two balls of different masses are thrown vertically upward with same initial speed. Which one will rise to a greater height.

3.What is the relative velocity of two bodies having equal velocities?

4.A railway train 400m long is going from New Delhi railway station to Kanpur. Can we consider railway train as a point object.

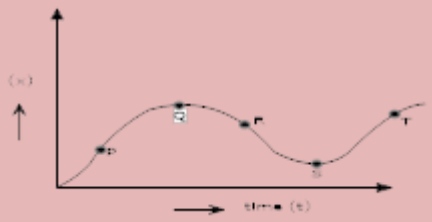
5.Shipra went from her home to school 2.5km away. On finding her home closed she returned to her home immediately. What is her net displacement? What is the total distance covered by her?

6.Can speed of an object be negative? Justify

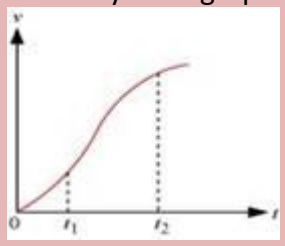
7.Under what condition the displacement and the distance of a moving object will have the same magnitude?

8.What is the shape of the displacement time graph for uniform linear motion?

9.Figure shows a displacements time graph. Comment on the sign of velocities at point P, Q, R, S and T.



10. The velocity-time graph of a particle in one-dimensional motion is shown in Fig. **3.29:**



11. Which of the following formulae are correct for describing the motion of the particle over the time-interval *t*2 to *t*1?

12. **(a)** $x(t_2) = x(t_1) + v(t_1)(t_2 - t_1) + \left(\frac{1}{2}\right) a(t_2 - t_1)^2$

13. **(b)** $v(t_2) = v(t_1) + a(t_2 - t_1)$

14. **(c) *v*Average =** $\left(x(t_2) - x(t_1)\right) / (t_2 - t_1)$

15. **(d) *a*Average =** $\left(v(t_2) - v(t_1)\right) / (t_2 - t_1)$

16. **(e)** $x(t_2) = x(t_1) + v\text{Average}(t_2 - t_1) + (\frac{1}{2}) a\text{Average}(t_2 - t_1)^2$

17. (f) $x(t_2) - x(t_1)$ = area under the $v - t$ curve bounded by the *t*-axis and the dotted line shown.

18. 11. In which of the following examples of motion, can the body be considered approximately a point object:

19. (a) a railway carriage moving without jerks between two stations.

20. (b) a monkey sitting on top of a man cycling smoothly on a circular track.

21. (c) a spinning cricket ball that turns sharply on hitting the ground.

22. (d) a tumbling beaker that has slipped off the edge of a table.

WORKSHEET-3

2 Marks Questions

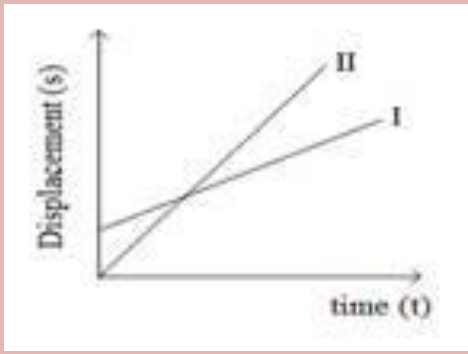
1.Write the characteristics of displacement?

2.Draw displacement time graph for uniformly accelerated motion. What is its shape?

3.Sameer went on his bike from Delhi to Gurgaon at a speed of 60km/hr and came back at a speed of 40km/hr. what is his average speed for entire journey.

4.What causes variation in velocity of a particle?

5.Figure. Shows displacement – time curves I and II. What conclusions do you draw from these graphs?



6.Displacement of a particle is given by the expression $x = 3t^2 + 7t - 9$, where x is in meter and t is in seconds. What is acceleration?

7.A particle is thrown upwards. It attains a height (h) after 5 seconds and again after 9s comes back. What is the speed of the particle at a height h?

8.Draw displacement time graph for a uniformly accelerated motion? What is its shape?

9.The displacement x of a particle moving in one dimension under the action of constant force is related to the time by the equation where x is in meters and t is in seconds. Find the velocity of the particle at (1) t = 3s (2) t = 6s.

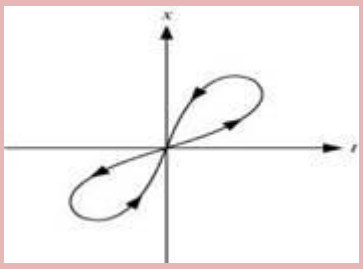
$t = \sqrt{x} - 3$

10.A balloon is ascending at the rate of 4.9m/s. A pocket is dropped from the balloon when situated at a height of 245m. How long does it take the packet to reach the ground? What is its final velocity?

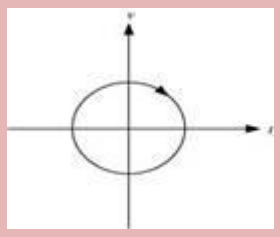
11. In Exercises 3.13 and 3.14, we have carefully distinguished between *average* speed and magnitude of *average* velocity. No such distinction is necessary when we consider instantaneous speed and magnitude of velocity. The instantaneous speed is always equal to the magnitude of instantaneous velocity. Why?

12. Look at the graphs (a) to (d) (Fig. 3.20) carefully and state, with reasons, which of these *cannot* possibly represent one-dimensional motion of a particle.

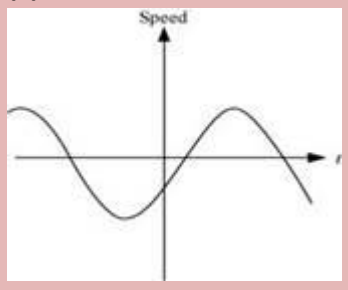
(a)



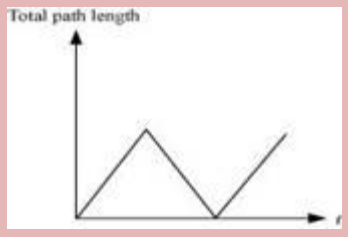
(b)



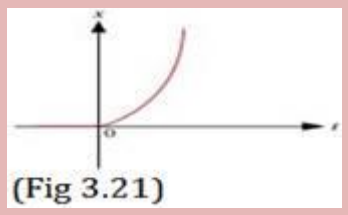
(c)



(d)



13. Figure 3.21 shows the *x-t* plot of one-dimensional motion of a particle. Is it correct to say from the graph that the particle moves in a straight line for $t < 0$ and on a parabolic path for $t > 0$? If not, suggest a suitable physical context for this graph.



(Fig 3.21)

14. A police van moving on a highway with a speed of 30 $\mathrm{km\ h^{-1}}$ fires a bullet at a thiefs car speeding away in the same direction with a speed of $192\ \mathrm{km\ h^{-1}}$. If the muzzle speed of the bullet is $150\ \mathrm{m\ s^{-1}}$, with what speed does the bullet hit the thiefs car ? (Note: Obtain that speed which is relevant for damaging the thief"s car).

15. Figure 3.24 gives the *x-t* plot of a particle in one-dimensional motion. Three different equal intervals of time are shown. In which interval is the average speed greatest, and in which is it the least? Give the sign of average velocity for each interval.

16. A boy standing on a stationary lift (open from above) throws a ball upwards with the maximum initial speed he can, equal to 49 m/s. How much time does the ball take to return to his hands? If the lift starts moving up with a uniform speed of 5 m/s and the boy again throws the ball up with the maximum speed he can, how long does the ball take to return to his hands?

17. A jet airplane travelling at the speed of ejects its products of combustion at the speed of relative to the jet plane. What is the speed of the latter with respect to an observer on

ground?

18. Two trains A and B of length 400 m each are moving on two parallel tracks with a uniform speed of in the same direction, with A ahead of B. The driver of B decides to overtake A and accelerates by. If after 50 s, the guard of B just brushes past the driver of A, what was the original distance between them?

WORKSHEET-4

3 Marks Questions

1.A police jeep on a petrol duty on national highway was moving with a speed of 54km/hr. in the same direction. It finds a thief rushing up in a car at a rate of 126km/hr in the same direction. Police sub – inspector fired at the car of the thief with his service revolver with a muzzle speed of 100m/s. with what speed will the bullet hit the car of thief?

2.A stone is dropped from the top of a cliff and is found to ravel 44.1m diving the last second before it reaches the ground. What is the height of the cliff? g = 9.8m/s^2

3.(a) Define the term relative velocity?

(b) Write the expression for relative velocity of one moving with respect to another body when objects are moving in same direction and are moving in opposite directions?

(c) A Jet airplane traveling at the speed of 500km/hr ejects its products of combustion at the speed of 1500km/h relative to the Jet plane. What is the speed of the latter with respect to an observer on the ground?

4.Define (i) v = u + at (ii) $V^2 - u^2 = 2as$ by calculus method

5. A woman starts from her home at 9.00 am, walks with a speed of $5\ km\ h^{-1}$ on a straight road up to her office 2.5 km away, stays at the office up to 5.00 pm, and returns home by an auto with a speed of. Choose suitable scales and plot the *x*-*t* graph of her motion.

6. A drunkard walking in a narrow lane takes 5 steps forward and 3 steps backward, followed again by 5 steps forward and 3 steps backward, and so on. Each step is 1 m long and requires 1 s. Plot the *x*-*t* graph of his motion. Determine graphically and otherwise how long the drunkard takes to fall in a pit 13 m away from the start.

7. A car moving along a straight highway with a speed of 126km h^{-1} is brought to a stop within a distance of 200m. What is the retardation of the car (assumed uniform), and how long does it take for the car to stop?

8. Read each statement below carefully and state with reasons and examples, if it is true or false; A particle in one-dimensional motion

(a) with zero speed at an instant may have non-zero acceleration at that instant

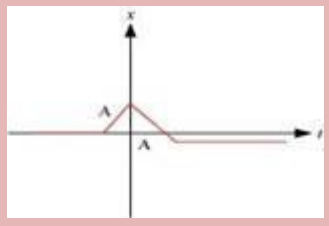
(b) with zero speed may have non-zero velocity,

(c) with constant speed must have zero acceleration,

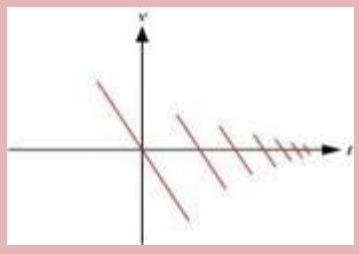
(d) with positive value of acceleration must be speeding up.

9. Suggest a suitable physical situation for each of the following graphs (Fig 3.22):

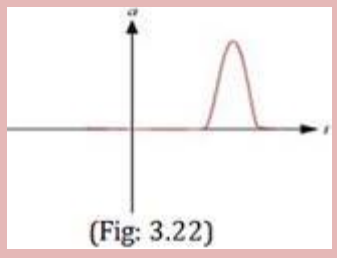
(a)



(b)

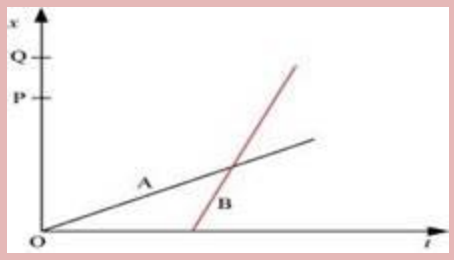


(c)



(Fig: 3.22)

10. The position-time (*x*-*t*) graphs for two children A and B returning from their school O to their homes P and Q respectively are shown in Fig. 3.19. Choose the correct entries in the brackets below;



(a) (A/B) lives closer to the school than (B/A)

(b) (A/B) starts from the school earlier than (B/A)

(c) (A/B) walks faster than (B/A)

(d) A and B reach home at the (same/different) time

(e) (A/B) overtakes (B/A) on the road (once/twice).

11. On a two-lane road, car A is travelling with a speed of 36 km h^{-1}. Two cars B and C approach car A in opposite directions with a speed of 54 km h^{-1} each. At a certain instant, when the distance AB is equal to AC, both being 1 km, B decides to overtake A before C does. What minimum acceleration of car B is required to avoid an accident?