## DARSHAN ACADEMY



Dear Student Innovators
"We need to turn the recovery into a real opportunity to do things right for the future."
So here are some guidelines for the Summer Assignments. Follow them sincerely and let creativity flow in air:

All Summer Assignments should be done in subject notebooks / A-4 sheets /project files, as per the instructions given by Subject Teacher.

Do it in a neat and presentable manner.
Original work of students will receive greater recognition and appreciation.
These assignments carry extra marks in Internal Assessment (Subject Enrichment).
Hence, submission of work is compulsory for all students.
Read and revise all the subjects covered till date.


## ENGLISH CORE

## ART INTEGRATED PROJECT

1. Watch 'The Story of Plastic' it is a searing expose. Make a project on 'Plastic Menace'. Take help from the clues given below:

Clues:

* Uncover the ugly truth behind plastic pollution.
* Environmental damage created by plastic.
* Human Rights abuses that occur throughout the lifecycle of plastic
* False solution of plastic recycling
* Initiative launched by Union Environment Minister to stop the plastic menace.
* Infographic to show the increase in the use of plastic.
* Some states/ countries that are successful in reducing the use of plastic.
* Cutting from Newspapers/Journals to show the impact of Plastic.
* Views about plastic ban

2. Research work on the monuments, architecture, art and culture, tradition and geography, etc. of Uttar Pradesh and Arunachal Pradesh. present your ideas in the form of a PowerPoint presentation or a project file. Original and creative work will be highly appreciated. You may scan the image for ppt or paste colourful print-outs in your file.

Criteria for assessment
a) Content (Introduction, development, evidence in support, etc.)
b) Originality
c) Quality of the presentation in terms of visual appeal

## ADVANCED WRITING SKILLS

1 Suppose you are a superhero. You have the power to fly or stop time. You wish to help others. Write a speech giving an expression to your imagination.
2 It is seen that few students work very hard and try to score $99-100 \%$ marks but most are happy with scores below $60 \%$ and some don't work even if they are passing on the margin or even failing. Write a speech to be delivered in the morning assembly on the topic 'The importance of Academic Achievement '.

NOTE- You can also submit audio or video for the speeches instead of the writeups.
3 Your school is going to conduct an annual sports day. You need volunteers from prefects and students to help the guests and maintain discipline during the event. Write a notice to be displayed on the notice board for this purpose.

4 As the Headboy/Headgirl of your school, you are organizing a Class excursion to Manali for XI and XII Std. student of your school. Write a notice giving details of it to be displayed on your school notice board.

## LITERATURE (HORNBILL \& SNAPSHOTS)

| 1 | The lesson 'The Portrait of a Lady' suggests a growing distance between the younger and older |
| :--- | :--- | generation. On the basis of your reading of the text comment if it is true. Comment on the basis of the real situation that you see in your family, among relatives, and in the society that you, directly, see around you.

2 What impression do you form of Mourad from the story 'The Summer of a Beautiful White Horse'?

3 Describe the character of Aram, the narrator in the story 'The Summer of a Beautiful White Horse'. How did he justify Mourad's act of stealing a horse? Why was he not ready to return the horse?

4 What family values prompted the narrator to visit 46, Marconi Street? What light does it reflect on her character and her relationship with her mother?

5 For how long and in what conditions the narrator remembered the address? Why does she decide to forget the address without fulfilling her wish?
6 On the basis of the poem 'A Photograph', explain: (i) 'terribly transient feet
(ii) 'both wry with the laboured ease of loss'.
7 Identify the phrases where alliteration and imagery have been used in the poem 'A Photograph'.

## GRAMMAR

## $1 \quad$ Rearrange the following jumbled words to make meaningful sentences:

So/to/itchy/is/that/I/wait/my/off/uniform/can't/take/it
a. Is/good/both/for/and/early/rising/old/adults.
b. The/weekend/I/can/love/down/be/I/myself/because/and/dress.
c. Finish/work / early/ one / can / go / and / a / for a walk/one's
d. its / urbanization / in India / everywhere / has / tentacles /spread.
e. youngsters/ toys/ with/ are/ Chinese/a/the/hit.
f. many /the / come/ different / Delhi /parts/ to/ of /country/ students from
g. computer / allowed/ pen drives/ this/ not/ are/ on

2 Fill in the blanks with determiners:
a. They were bored because there was $\qquad$ to do.
b. We invited $\qquad$ friends over to our house for a barbecue.
c. of the cakes had been baked the day before.
d. Sally didn't take $\qquad$ photos when she went on holiday.
e. The teacher gave $\qquad$ of the students a piece of paper.
f. Every one of $\qquad$ sent me a birthday card, but none of them bought me a present.
g. Henry had $\qquad$ idea what the answer to the question was.
h. I like many of her songs, but not $\qquad$ of them are good.

3 Complete the following paragraph by filling in the correct MODALS.
a. I didn't feel very well yesterday. I ..... eat anything.
b. I was using my pencil a minute ago. It ..... be here somewhere!
c. You really $\qquad$ be late again.
d. Phone her now. She ..... home by now.
e. I ..... be able to help you, but I'm not sure yet.
f. Already as a child Mozart ..... play the piano beautifully.
g. I really ..... try to get fit.
h. ..... I go to the bathroom, please?
i. His excuse ..... be true, but I don't believe.
j. . ..... you open the window, please. sheets.

The process of borrowing a book from the school library is very simple. Each student is issuing a library card. The library maintains the record of all books in catalogues. The student which wants to borrow
a.
b. $\qquad$ a book have to fill up a requisition slip bearing
c.
d. $\qquad$ the name of the book and it's author. If it is available
e.
f.
card. In case it has been issued to another card holder, the student is asking to contact on a particular date when the book is due.

In the unedited passage given below one word has been omitted in each line. Write the missing word along with the word that comes before and the word that comes after it in your answer sheet. Ensure that the word that forms your answer is underlined.
There are nutrients in nearly any type of food- but nutrients need eaten in the right amount. Too much or doesn't help you stay healthy. To help guide everyone how much of each type of food a person eats scientists came up the idea of a food pyramid if you eat too much of the food groups the top and too little of the food groups at the bottom the pyramid collapses.
a.
b.
b. ................
c.
d. ................
e. ................
f.
g.
h. ...............
i.
j. ................
f. ................
. ................
...............
. .................
g.
h. $\qquad$

## PHYSICS

## (UNIT AND MEASUREMENT, KINAMIETICS)

LOTS:
Q1. If in the case of motion, displacement is directly proportional to the square of the time elapsed, what do you think about its acceleration' Explain, why?

Q2. Which graph represents higher velocity and why?

t
Q3. An object is moving with constant velocity v along a straight line. What will be the shape of the displacement-time graph if
(a) $x_{0}=-v e, v=+v e$
(b) $x_{0}=+v e \quad v=-v e$

Q4. The minute's hand of a wall clock is 10 cm long. Find its displacement and the distance covered from 12.00 noon to 12.30 pm .
Q5. State the number of significant figures in the following:
a) 2542.002
b) 0.000254
c) 0.000242400
d) 24524
e) 2000
f) 2000 meter

Q6. The circular scale of a screw gauge has 50 divisions and a pitch of 0.5 mm . Find the diameter of the sphere. The Main scale reading is 2 .

Q7. A particle is thrown upwards. It attains a height h after 5 s and again after 9 s . What is the speed of the particle at height $h$ ?
Q8. A body covered a distance of ' 1 ' metre along a semi-circular path. Calculate the magnitude of displacement of the body and the ratio of distance to displacement
Q9. Draw position-time graphs for two objects having zero relative velocity.
Q10. The displacement of a body is given to be proportional to the cube of time elapsed. What is the nature of the acceleration of the body?
Q11. The distance ' $x$ ' of a particle moving in one dimension, under the action of a constant force is related to time ' $t$ ' by the equation $t=\sqrt{x}+3$, where ' $x$ ' is in metres and ' $t$ ' in seconds. Find the displacement of the particle when its velocity is zero.
Q12. A ball is thrown vertically upwards. Draw its velocity-time curve.
Q13. A train is moving due east with a velocity of $60 \mathrm{~km} / \mathrm{h}$ and a car is running due north with a velocity of $60 \mathrm{~km} / \mathrm{h}$. What is the observed velocity of the car as felt by a passenger in the train?
Q14. Prove that A=I - 2J AND B=2i +j are mutually perpendicular to each other.
Q15. A swimmer can swim with a velocity of $10 \mathrm{~km} / \mathrm{h}$ with respect to the water flowing in a river with a velocity of $5 \mathrm{~km} / \mathrm{h}$. In what direction should he swim to reach the point on the other bank just opposite to his starting point.?

Q16. Earth moves in a circular orbit around the sun once every year with an orbital radius of $1.5 \times 10^{11}$ m . Find out the earth's velocity and centripetal acceleration.

Q17. Define uniform circular motion. Is it an accelerated motion? If yes what is the direction of the acceleration?
Q18. A ball is thrown vertically upward with a velocity of $20 \mathrm{~m} / \mathrm{sec}$ from the top of a multi-storied building. The height of a point from where the ball is thrown is 25 m from the ground. (i) How high the ball will rise? (ii) How long will it be before the ball hit the ground?
Q19. Show that the area under velocity -time graph of an object moving with constant acceleration in a straight line in a certain time interval is equal to the distance covered by the object in that interval.
Q20. Use integration technique to prove that the distance travelled in nth second, $\mathrm{S}_{\mathrm{nth}}=\mathrm{u}+\frac{a}{2}(2 n-1)$
Q21. Define centripetal acceleration. Derive an expression for the centripetal acceleration of a particle moving with uniform speed $v$ along a circular path of radius $r$. Discuss the direction of this acceleration
Q22. Write the dimension formula of the following:
a) Universal gravitational constant
b) Gas Constant
c) Plank constant
d) Potential difference
e) Kinetic energy

## HOTS:

Q23. The air bubble formed by an explosion inside water performs oscillations with time period T which depends on pressure ( $p$ ), density ( $\rho$ ) and on energy due to explosion $(E)$. Establish a relation between T, $p, E$ and $\rho$.

A new unit of length is chosen such that the speed of light in a vacuum is unity. What is the
Q24. distance between the sun and the earth in terms of the new unit, if light takes 8 min and 20 sec to cover this distance?

Q25. Which of the following is the most precise device for measuring length?
(a) Vernier calliper with 20 divisions on the sliding scale
(b) a screw gauge of pitch 1 mm and 100 divisions on the circular scale
(c) an optical instrument that can measure length within a wavelength of light

Q26. The mass of a box measured by a grocer's balance is 2.30 kg . Two gold pieces of masses 20.15 g and 20.17 g are added to the box. What is
(a)the total mass of the box
(b)the difference in masses of the gold pieces to correct significant figures.

## CASE STUDY

Q27. The time rate of change of position of the object in any direction is called the speed of the object If an object covers equal distances in equal intervals of time, then its speed is called uniform speed and if it covers unequal distances in equal intervals of time, then its speed is called nonuniform or variable speed. The ratio of the total distance travelled by the object to the total time taken is called the average speed of the object. The speed may be positive or zero but never negative. The speed-time graph of a particle moving along a fixed direction is shown in following Fig
i) Distance travelled by the particle between 0 to 10 seconds
(a) 60 m
(b) 50 m
(c) 120 m
(d) zero
(ii) Average speed between time interval 0 to 10 s
(a) $12 \mathrm{~m} / \mathrm{s}$
(b) $6 \mathrm{~m} / \mathrm{s}$
(c) $10 \mathrm{~m} / \mathrm{s}$
(d) $60 \mathrm{~m} / \mathrm{s}$
(iii) The time when the speed was minimum
(a) at $\mathrm{t}=0 \mathrm{~s}$ and $\mathrm{t}=5 \mathrm{~s}$
(b) at $\mathrm{t}=5 \mathrm{~s}$ and $\mathrm{t}=20 \mathrm{~s}$
(c) at $\mathrm{t}=5 \mathrm{~s}$ and $\mathrm{t}=10 \mathrm{~s}$
(d) at $t=0 \mathrm{~s}$ and $\mathrm{t}=10 \mathrm{~s}$
(iv) The time when speed was maximum
(a) $\mathrm{t}=0 \mathrm{~s}$
(b) $t=5 \mathrm{~s}$
(c) $\mathrm{t}=10 \mathrm{~s}$
(d) $\mathrm{t}=12 \mathrm{~s}$
(v) Speed is positive at time interval
(a) $t=0$ to $t=5 \mathrm{~s}$
(b) $\mathrm{t}=5$ to $\mathrm{t}=10 \mathrm{~s}$
(c) $\mathrm{t}=0$ to $\mathrm{t}=10 \mathrm{~s}$
(d) All of these

## CHEMISTRY

## ART INTEGRATED PROJECT (Make on A4 - sheets)

## Topics

> Classification and IUPAC Nomenclature of Organic Compounds
$>$ Effects of Pollution on the pH of Rainwater
> Contents Present in Cold Drinks Available in the Market
> Uses of Endothermic and Exothermic Reactions
$>$ Effects of the Green House Gasses on the Environment and Its Prevention Methods


## PRACTICE ASSIGNMENT FOR UNIT: SOME BASIC CONCEPTS OF CHEMSITRY

## MCQ

Q1.
Two students performed the same experiment separately and each one of them recorded two readings of mass which are given below. The correct reading of mass is 3.0 g . On the basis of the given data, mark the correct option out of the following statements.

| Students | Readings |  |
| :---: | :---: | :---: |
|  | (i) | (ii) |
| A | 3.01 | 2.99 |
| B | 3.05 | 2.95 |

(a) Results of both the students are neither accurate nor precise.
(b) Results of student A are both precise and accurate.
(c) Results of student B are neither precise nor accurate.
(d) Results of student B are both precise and accurate.

Q2. Assertion (A): Combustion of 16 g of methane gives 18 g of water.
Reason (R): In the combustion of methane, water is one of the products.
(a) Both A and R are true but R is not the correct explanation of A.
(b) A is true but R is false
(c) A is false but R is true.
(d) Both A and R are false
$\left.\begin{array}{|l|l|l|}\hline \text { Q3. } & \begin{array}{l}\text { One mole of any substance contains } 6.022 \times \\ 1023 \text { atoms/molecules. Number of molecules of } \\ \text { H2S04 present in } 100 \mathrm{~mL} \text { of } 0.02 \mathrm{M} \text { H2S04 solution is }\end{array} & \begin{array}{l}\text { (a) } 12.044 \times 1020 \text { molecules } \\ \text { (b) } 6.022 \times 1023 \text { molecules }\end{array} \\ \text { (c) } 1 \times 1023 \text { molecules } \\ \text { (d) } 12.044 \times 1023 \text { molecules }\end{array}\right]$

| Q3. | Match the following: |  |
| :---: | :---: | :---: |
| Column I |  | Column II |
|  | A. 88 g of C 02 | a. 0.25 mol |
|  | B. $6.022 \times 1023$ molecules of H 20 | b. 2 mol |
|  | C. 5.6 litres of 02 at STP | c. 1 mol |
|  | D. 96 g of 02 | d. $6.022 \times 1023$ molecules |
|  | E. 1 mole of any gas | e. 3 mol |
| PRACTICE ASSIGNMENT FOR UNIT: STRUCTURE OF ATOM |  |  |
| MCQ |  |  |
| Q1. | The probability density plots of Is and 2s orbitals are given in the following figures. <br> The density of dots in a region represents the probability density of finding electrons in the region. On the basis of the above diagram, which of the following statements is incorrect? | (a) 1s and 2 s orbitals are spherical in shape. <br> (b) The probability of finding the electron is maximum near the nucleus. <br> (c) The probability of finding the electron at a given distance is equal in all directions. <br> (d) The probability density of electrons for 2s orbital decreases uniformly as the distance from the nucleus increases. |
| Q2. | Which of the following sets of quantum numbers are correct? |     <br>  $n_{\text {CBSELab.com }}$ $m_{l}$  <br> (a) 1 1 +2 <br> (b) 2 1 +1 <br> (c) 3 2 -2 <br> (d) 3 4 -2 |
| Q3. | A number of angular nodes for 4 d orbital is | (a) 4 <br> (b) 3 <br> (c) 2 |

## (d) 1

## LOTS

| Q1. | Write the complete symbol for the atom with the given atomic number ( Z ) and atomic mass ( A ) | (i). $Z=17, A=35$ <br> (ii). $Z=92, A=233$ <br> (iii). $\mathrm{Z}=4, \mathrm{~A}=9$ |
| :---: | :---: | :---: |
| Q2. | Find the energy of each of the photons which | (i) correspond to light of frequency $3 \times 1015 \mathrm{~Hz}$. <br> (ii) have a wavelength of $0.50 \AA$ |
| Q3 | The arrangement of orbitals on the basis of energy is based upon their $(\mathrm{n}+\mathrm{l})$ value. The lower the value of ( n +1 ), the lower is the energy. For orbitals having the same values of ( $n+I$ ), the orbital with the lower value of n will have lower energy. | Based upon the above information, arrange the following orbitals in the increasing order of energy. <br> (a) $1 \mathrm{~s}, 2 \mathrm{~s}, 3 \mathrm{~s}, 2 \mathrm{p}$ <br> (b) $4 \mathrm{~s}, 3 \mathrm{~s}, 3 \mathrm{p}, 4 \mathrm{~d}$ <br> (c) $5 \mathrm{p}, 4 \mathrm{~d}, 5 \mathrm{~d}, 4 \mathrm{f}, 6 \mathrm{~s}$ <br> (d) $5 \mathrm{f}, 6 \mathrm{~d}, 7 \mathrm{~s}, 7 \mathrm{p}$ <br> Based upon the above information, solve the questions given below: <br> (a) Which of the following orbitals has the lowest energy? <br> 4d, 4f, 5s, 5p |
| Q4. | Calculate the total number of electrons present in one mole of methane. <br> (ii) Find <br> (iii) Find | the total number and the total mass of neutrons in 7 mg of 14 C . <br> (Assume that the mass of a neutron $=1.675 \times 10-27 \mathrm{~kg}$ ). <br> (a) the total number and (b) the total mass of protons in 34 mg of NH3 at STP. <br> Will the answer change if the temperature and pressure are changed? |
| Q5. | A photon of wavelength $4 \times 10-7 \mathrm{~m}$ strikes on a metal surface, the work function of the metal is 2.13 eV . Calculate | the energy of the photon (eV), <br> (ii) the kinetic energy of the emission, and <br> (iii) the velocity of the photoelectron ( $1 \mathrm{eV}=1.6020 \times 10-$ 19 J) |
| HOTS |  |  |
| Q1. | Electromagnetic radiation of wavelength 242 nm is just sufficient to ionise the sodium atom. Calculate the ionisation energy of sodium in kJ mol-1. |  |
| Q2. | A 25-watt bulb emits monochromatic yellow light of the wavelength of $0.57 \mu \mathrm{~m}$. Calculate the rate of emission of quanta per second. |  |

## BIOLOGY

## Answer the Multiple Choice Questions.

1 Plants that possess spores and embryo but lack vascular tissues and seeds?
a) Rhodophyta
b) Bryophyta
c) Pteridophyta
d) Phaeophyta

2 Which one is not an exception in angiosperms?
a) Double fertilization
b) Secondary growth
c) Presence of vessels
d) Autotrophic nutrition

3 Pteridophytes differ from mosses in
a) Independent gametophyte
b) Dependent gametophyte
c) Flagellate antherozoids
d) Independent and dominant sporophyte

4 Angiosperms are the dominant flora because of
a. Domestication by man
b. Power of adapting in diverse habitats
c. Self-pollination property.
d. Property of producing a large number of seeds.

5 Which of the following combinations is incorrect?
a) Nematoda- roundworms, pseudocoelomate
b) Calcarea- gastrovascular cavity, coelom present
c) Echinodermata- coelom present, bilateral symmetry.
d) Platyhelminthes- gastrovascular cavity, flatworms, acoelomate

Flame cells are the excretory structures for
a. Annelida
b. Coelenterates
c. Platyhelminthes
d. Echinodermata

7 Phylum Porifera is classified based on
a) Branching
b) Symmetry
c) Spicules
d) Reproduction


## MATHEMATICS

## SETS

| Q1 | The set $\left\{\mathrm{x}: x^{2}=\mathrm{x}, \mathrm{x} \in \mathrm{N}\right\}$ can be expressed in roster form as | a. $\{0,1\}$ <br> b. $\{1\}$ <br> c. $\{0\}$ <br> d. $\}$ |
| :---: | :---: | :---: |
| Q2 | Let $\mathrm{A}=\left\{\mathrm{x}: \mathrm{x} \in \mathrm{Z}\right.$ and $\left.x^{2} \leq 4\right\}$ and $\mathrm{B}=\{\mathrm{x}: \mathrm{x} \in \mathrm{R}$ and $\left.x^{2}-3 \mathrm{x}+2=0\right\}$.Then, <br> a. | a. $A=B$ <br> b. $A \neq B$ <br> c. $A \in B$ <br> d. $A \notin B$ |
| Q3 | Let $\mathrm{A}=\{1,2,3,4,5,6,7,8,9,10\}$ and $\mathrm{B}=\{2,3,5,7\}$ Then, which of the following is true? | a. (a) $\mathrm{A} \cap \mathrm{B}=\mathrm{A}$ <br> b. (b) $A \cap B=B$ <br> c. (c) $A \cap B \not \subset B$ <br> d. (d) None of these |
| Q4 | Let $\mathrm{A}, \mathrm{B}, \mathrm{C}$ be three sets. If $\mathrm{A} \in \mathrm{B}$ and $\mathrm{B} \subset \mathrm{C}$, then | a. $\mathrm{A} \subset \mathrm{C}$ <br> b. $\mathrm{A} \in \mathrm{C}$ <br> c. $\mathrm{A} \notin \mathrm{C}$ <br> d. None of these |
| Q5 | Write the set $\mathrm{A}=\{14,21,28,35,42, \ldots, 98\}$ in set-builder form. |  |
| Q6 | Describe the following set in set-builder form B $=\{53,59,61,67,71,73,79,83,89,97\}$ |  |
| Q7 | Write the following intervals in set-builder form. <br> (i). $[6,12]$ <br> (ii). $[-23,5)$ |  |
| Q8 | If $\mathrm{A}=\{1,2,3\}$, then find the power set of A . |  |
| Q9 | Write the following as intervals and represent on real line. <br> (i) $\{x: x \in R,-3<x \leq 7\}$ <br> (ii) $\{x: x \in R,-11<x<-7\}$ | $\begin{array}{cccc} \longleftrightarrow-\infty & -3 & 7 & \infty \\ -\infty & 0 & 0 & 0 \\ -11 & -7 & \infty \end{array}$ |
| Q10 | If $A, B$ and $C$ are three sets such that $A \subset B$, then prove that $\mathrm{C}-\mathrm{B} \subset \mathrm{C}-\mathrm{A}$. |  |

## RELATION AND FUNCTION

| 1 | If $\mathrm{n}(\mathrm{AX} \mathrm{B})=45$, then $\mathrm{n}(\mathrm{A})$ cannot be | 15 |
| :--- | :--- | :--- |
|  |  | 17 |
|  |  | 5 |
|  |  | 9 |

$2 \quad$ Let $\mathrm{n}(\mathrm{A})=\mathrm{m}$ and $\mathrm{n}(\mathrm{B})=\mathrm{n}$. Then, the total number of non - empty relations that can be defined from A to $B$ is

| 3 | If $f(x)=\frac{1}{2-\sin 3 x^{\prime}}$, then range (f) is equal to | $\begin{array}{rc} \hline[-1,1] & {\left[-\frac{1}{3}, \frac{1}{3}\right]} \\ & {\left[\frac{1}{3}, 1\right]} \\ & {\left[-1, \frac{-1}{3}\right]} \end{array}$ |
| :---: | :---: | :---: |
| 4 | $A$ and $B$ are two sets given in such a way that $A B$ contains 6 elements. If three elements of $\mathrm{A} \times \mathrm{B}$ are $(1,3),(2,5)$ and $(3,3)$, find $A, B$ and remaining elements of A x B. |  |
| 5 | If $A=\{1,3,6\}$ and $B=\{x, y\}$, then represent the following cartesian products by an arrow diagrams <br> (i). AXB <br> (ii). AXA |  |
| 6 | Identify the curve, which is a relation or function. |   |
| 7 | Find the domain of each of the following function. <br> (i). $\frac{1}{\sqrt{x-2}}$ <br> (ii). $\sqrt{4-x^{2}}$ |  |
| 8 | Find the domain and range of the function $f(x)=1$ -\|x-2|. |  |
| 9 | Find the quotient of the identity function by the modulus function. |  |

## TRIGONOMETRIC FUNCTIONS

| 1. | In a circle of radius r, an arc of length r will subtend <br> an angle of | (a) r radian <br> (b) 1 radian <br> (c) $\pi$ radian <br> (d) $2 \pi$ radian |
| :---: | :--- | :--- |
| 2. | $\frac{\cos 4 x+\cos 3 x+\cos 2 x}{\sin 4 x+\sin 3 x+\sin 2 x}$ is equal to | a.sin2 x <br> b. $\cos 3 \mathrm{x}$ <br> c. tan 3 x <br> d. $\cot 3 \mathrm{x}$ |
| 3. | Find the angle in radian through which a pendulum <br> swings, if its length is 75 cm and tip describes an arc <br> of length 21 cm. |  |
| 4. | Convert the following into radians: $-47^{0} 30^{\prime}$ |  |
| 5. | Prove that <br> $\tan ^{2} \theta-\sin ^{2} \theta=\tan ^{2} \theta \sin ^{2} \theta$. |  |


| 6. | Find the value of $\cos \theta$ and $\tan \theta$, if $\sin \theta=-\frac{3}{5}$ and <br> $\pi<\theta<\frac{3 \pi}{2}$. |  |
| ---: | :--- | :--- |
| 7. | If $\cos \theta=-\frac{1}{2}, \theta$ lies in III quadrant, then find other <br> five trigonometric functions. |  |
| 8. | Find the value of | (i) $\sin \left(\frac{25 \pi}{3}\right)$ <br> (ii) $\cos \left(\frac{41 \pi}{4}\right)$ |
| 9. | Find the value of $\tan (\alpha+\beta)$, if $\cot \alpha=\frac{1}{2}, \alpha \in$ <br> $\left(\pi, \frac{3 \pi}{2}\right)$ and $\sec \beta=-\frac{5}{3}, \beta \in\left(\frac{\pi}{2}, \pi\right)$. |  |
| 10. | Prove that <br> Sin $10^{0} \sin 30^{0} \sin 50^{\circ} \sin 70^{0}=\frac{1}{16}$. |  |

## PHYSICAL EDUCATION



## PAINTING

| Q1. | Write down the origin and development of Indus Valley Civilization, also describe the artistic <br> things found in Indus Valley civilization. <br> Q2. <br>  <br>  <br>  <br>  <br>  <br> composition. <br> (a). Wizard's dance <br> (b). Dancing girl <br> Q5. <br> Write a short note on the subject matter and material used in prehistoric rock paintings. <br> P <br> LANDSCAPE-2 |
| :--- | :--- | :--- |



NOTE: Draw in your drawing file in pencil shading.

## INFORMATICS PRACTICES (065)

| Objective Type Questions |  |
| :---: | :---: |
| 1 | Python is a case sensitive language. This means $\qquad$ <br> a. Capital and small letters are same in python. <br> b. Python doesn't care about the case of alphabets. <br> c. Python treats capital and small letters as different. <br> d. Python automatically capitalizes the small letters. |
| 2 | Which of the following makes available its source code? <br> e. Freeware <br> f. FOSS <br> g. Proprietary <br> h. None of them |
| 3 | Which of the following is not the valid Python statement? <br> i. $a=5$ <br> j. $5=\mathrm{a}$ <br> k. $3+\mathrm{C}=\mathrm{A}$ <br> 1. Both b) and c) |
| 4 | Python is a/an independent language. |
| 5 | State true/false <br> a) Registers are high-speed temporary storage area found in the CPU. <br> b) In python, integer data type has a fractional part. |
| Subjective Type Questions |  |
| 6 | Write the output of the following code: <br> a) $\mathrm{Num}=5$ <br> print(type(Num)) <br> b) $\mathrm{Num}=25$ <br> print(Num*2) <br> c) $\mathrm{val}=$ "Hello" <br> print(val*2) <br> d) $\mathrm{val}=20$ <br> print(type(val)) |
| 7 | Identify the types of the following literals: 23.789, 23789, True, "False" |
| 8 | Name the input or output devices used to do the following: <br> a) To output audio <br> b) To enter textual data <br> c) To make hardcopy of a text file <br> d) To display the data or information |
| 9 | What is the difference between Script Mode and Interactive mode of Python programming? <br> Discuss the following terms: <br> m. Disk Defragmenter <br> n. Cache Memory |

## ECONOMICS

## Micro Economics - Ch - 1 - Introduction to Micro Economics

| LOTS |  |  |
| :---: | :---: | :---: |
| 1 | Labour intensive techniques are chosen in a : | a. labour surplus Economy <br> b. capital surplus economy <br> c. developed economy <br> d. developing economy |
| 2 | Pick up the example of Microeconomics: | a. Total output in an economy <br> b. Inflation in the industrial sector <br> c. Salary of an engineer <br> d. Total investment |
| 3 | Why is PPC concave? Explain |  |
| 4 | Explain the central problem 'How to Produce' with the help of examples. |  |
| HOTS |  |  |
| 5 | When the shape of PPC is straight line ? |  |
| 6 | Due to the implementation of employment schemes, what will happen to the PPC? | a. Under-Utilization of PPC <br> b. Along the PPC <br> c. Growth of PPC <br> d. All the above |
| 7 | Construct a PPC by taking hypothetical PPC schedule. |  |
| Ch-2 - Consumer's Equilibrium |  |  |
| LOTS |  |  |
| 1 | A consumer consumes only two goods. If price of one of the goods falls, the indifference curve | (a) Shift upward <br> (b) shift downwards <br> (c) Can shift both upwards or downwards <br> (d) does not shift. |
| 2 | If the Marginal rate of substitution is constant throughout, the indifference curve will be : | (a) Parallel to the axis <br> (b) Downward sloping concave <br> (c) Downward sloping convex <br> (d) Downward sloping straight line. |
| 3 | Why two indifference curves never intersect each other? |  |
| HOTS |  |  |
| 4 | Marginal Utility is | (a) utility from first unit of a commodity <br> (b) the utility from the last unit consumed <br> (c) T.U. divided by the number of units <br> (d) None of these. |


| 5 | 5 | Distinguish between Diminishing Marginal Utility and Diminishing Marginal Rate of Substitution. |  |
| :---: | :---: | :---: | :---: |
| 6 | 6 | What is the difference between a budget set and budget constraint? |  |
| Ch - 3 - Theory of Demand |  |  |  |
|  | LOTS |  |  |
| 1 | 1 | Any statement about demand for a good is considered complete only when the following in it | (a) Price of the good <br> (b) Quantity of the good <br> (c) Period of time <br> (d) All of the above. |
| 2 | 2 | Define Demand by a consumer. |  |
| 3 | 3 | Define Individual demand and Market demand with the help of schedule and curve. |  |
| 4 | 4 | When does change in quantity demanded take place? |  |
| HOTS |  |  |  |
| 5 | 5 | As we move along a downward sloping straight line demand curve from left to right demand | (a) remains unchanged <br> (b) goes on falling <br> (c) goes on rising <br> (d) falls initially then rises |
| 6 | 6 | Why are goods demanded? |  |
| 7 | 7 | If the price of commodity X rises and this leads to a decrease in demand for commodity Y, how are the two goods related? |  |
| 8 | 8 | What kind of commodity will have an inverse relationship between income and demand? |  |
| STATISTICS - Ch - 1 Introduction to Statistics |  |  |  |
| LOTS |  |  |  |
| 1 | 1 | Which of the following are economic activities? | (a) Distribution <br> (b) Production <br> (c) Consumption <br> (d) All of the above |
| 2 | 2 | You have unlimited wants and limited resources to satisfy them. Explain by giving two examples. |  |
| 3 | 3 | Explain the meaning of Scarcity used in economics. |  |
| HOTS |  |  |  |
| 4 | 4 | Basic reason for existence of economic problems is | (a) Unlimited wants <br> (b) Scarcity <br> (b) Alternative uses <br> (d) None of the above. |
| 5 | 5 | Differentiate between Output and Production. |  |
| 6 | 6 | What are your reasons for studying Economics? |  |
| Ch-2 - Meaning, Scope and Importance of Statistics and Collection of Data |  |  |  |
| LOTS |  |  |  |
| 1 | 1 | Statistics is defined in terms of numerical data in the: | (a) Singular Sense <br> (b) Plural Sense <br> (c) Either (a) or (b) <br> (d) Both (a) and (b). |


| 2 | In a village of 200 farms, a study was conducted to find <br> the cropping pattern. Out of the 50 farms surveyed, 50\% <br> grew only wheat. Identify the population and the sample <br> here |  |
| :--- | :--- | :--- |
| 3 |  <br> 'Reasons' against your locality about education pattern in <br> any five families. |  |
| HOTS | Which of the following methods give better results and <br> why? |  |
| 5 | State whether the following statements are true or false : <br> (a) Any single numerical figure is statistics. <br> (b) In singular sense, Statistics means a collection of <br> numerical facts. <br> (c) Statistics makes the complicated data simple and <br> intelligible |  |
| 6 | 'Statistics is affected by multiplicity of causes'. Explain <br> this with the help of an example |  |

## BUSINESS STUDIES

## Assignment-1

|  | Attempt all Questions:- |  |
| :---: | :---: | :---: |
| 1 | Name the two categories of village and small industries sector in India. | Mention |
| 2 | Name the small-scale unit in which investment in plant and machinery does not exceed rest 25 laths. | Mention |
| 3 | How much do small industries in India account for the total industrial units? | Explanation |
| 4 | Give the full form of NABARD. | Abbreviate |
| 5 | What is commercial paper? | Explanation |
| 6 | What is ADR? | Explanation |
| 7 | What is meant by debenture? | Explanation |
| 8 | Explain the term 'Factoring'? | Explanation |
| 9 | How would you differentiate between an ancillary unit and tiny unit? | Differentiate |
| 10 | What is the difference between small scale enterprise and cottage industries? | Differentiate |
| 11 | Explain four important problems of small business in India. |  |
| 12 | Differentiate between Employment, Profession and Business. | Differentiate |
| 13 | Difference between Private and Public company. | Differentiate |
| 14 | Explain Shares and it's types. |  |

## Assignment-2

1 Prepare a collage on the following topics as allotted Roll No wise-

| Points | Questions |
| :--- | :--- |
| $\mathbf{1 - 5}$ | Indian MNC's and their CEO's with their Brand name, Brand Mark and Taglines |
| $\mathbf{6 - 1 0}$ | Non-Indian MNC's and their CEO's with their Brand name, Brand Mark and Taglines |
| $\mathbf{1 1 - 1 5}$ | Various quality marks and their issuing agencies India and worldwide |
| $\mathbf{1 6 - 2 0}$ | various scams that took place in India after independence with their volume and reasons. |
| $\mathbf{2 1 - 2 5}$ | Popular Co-Operative societies in India with their details |

2 Revise both the Units covered in class-
1 Nature and purpose of Business
2 Forms of Business organisations


3 Design a business -toon or write an article on any corporate/current issue or any creative idea for business for Commerce section in school magazine.

4 Prepare project file on your chosen topic, which is approved by teacher, subdivided in five chapters as guided in class.

## ACCOUNTANCY

## Chapter-1\&2: <br> INTRODUCTION TO ACCOUNTING \& BASIC ACCOUNTING TERMS

1) What do you understand by "Accounting"? How is it different from normal recording.
2) Taking Inspiration from the following, choose the correct option.
a) Assets = Liabilities
b) Debit = Credit
c) Assets = Liabilities + Capital
d) All of these.
3) What is the relationship that you have found between Accountancy and Business Studies?
4) What do you mean by Fictitious Asset?
5) Explain Capital as an Internal Liability?
6) Give Difference between Debtors and Creditors on following basis.

| Basis | Debtors | Creditors |
| :--- | :--- | :--- |
| Creation |  |  |
| Assets/Liabilities |  |  |

7) Differentiate between Profit and Gain.
8) Explain reasons why various users need "Accounting Information"?
9) Give details about the Assets \& its Types.
10) Explain who is the Proprietor of a business. What are this/her contribution towards the business.
11) What is Bookkeeping. How it is different from accounting?
12) Explain any three "Branches of Accounting" from the following figure:

13) State the End Product of Financial Accounting.
14) Explain all three types of Expenditure with suitable examples.

|  |  | Expital |
| ---: | :--- | :--- |
| $\mathbf{1 5 )}$ | Explain Non-Current Assets. Give Five Examples of Non-Current Assets. |  |
| $\mathbf{1 6 )}$ | Explain Bank Overdraft \& how is it different from Normal Loan. |  |
| $\mathbf{1 7 )}$ | Explain who is an Insolvent Person. |  |
| $\mathbf{1 9 )}$ | Explain why non-monetary transactions are not to be recorded. |  |
| $\mathbf{2 0 )}$ | Explain all three forms of Stock in detail with suitable examples |  |

