# DAV POLICE PUBLIC SCHOOL, JHAJJAR

## HOLIDAY HOMEWORK

## Class – XI (SCIENCE)

#### ENGLISH

#### Revise all the topics covered up to now.

#### Write your responses to the questions listed below in your notebook, ensuring that your work is tidy.

- 1. Describe the transformation in the relationship between the author and his grandmother as he grows up.
- 2. What does the author's grandmother's daily routine reveal about her character and values?
- 3. Why is the grandmother's death described as almost ceremonial?
- 4. Discuss the symbolic significance of the sparrows in the story.
- 5. Compare the narrator's feelings at the beginning and the end of the story. How does his perception change?
- 6. What does the poet mean by "the sea holiday was her past, mine is her laughter"?
- 7. How does the photograph evoke both nostalgia and loss in the poet's mind?
- 8. Explain the significance of the cardboard in the poem.
- 9. Discuss the theme of time and transience as expressed in the poem.
- 10. Identify and explain two poetic devices used by Shirley Toulson in the poem.
- 11. Compare the themes of aging and memory in both "The Portrait of a Lady" and "A Photograph".
- 12. How does Khushwant Singh use irony and gentle humour to depict his grandmother?
- 13. Write a short paragraph on how the poet uses a photograph to capture irreversible changes in time.
- 14. Why is letter writing still considered important in the digital age? Give reasons with examples.
- 15. List any 4 features that differentiate classified ads from display ads in newspapers.
- 16. You are Ram/Rajani. Draft a classified advertisement, in not more than 50 words, to be published in India Times for the sale of a used motor car giving all the necessary details. You can be contacted at 12345679.
- 17. You are Gopal/Gopa, 4 Manav Road, Kanpur. You have lost an expensive watch on your way to the market. Write an advertisement for the 'Lost and Found' column of a local newspaper, giving all the relevant details. Offer a reward also. Write the advertisement in about 50 words.
- 18. You are the Director of Sunny Tutorials, an academy providing intensive as well as extensive postal coaching to students appearing for IIT-JEE, CBSE-PMT, etc. Write an advertisement for publication in a newspaper.
- 19. You are Shirish Saxena of 47, Mall Road, Shimla. You are a young man of 35 with seven years of experience as an expert executive. You seek an immediate change to some prestigious export house in Mumbai/Bangalore. Draft a suitable advertisement for the 'Situation Wanted' column of a National Daily.
- 20. You are Sunny/Sammy. You wish to dispose of an old washing machine. Draft a suitable advertisement with your contact details.

- 21. You are the Director of Sunny Tutorials, an academy providing intensive as well as extensive postal coaching to students appearing for IIT-JEE, CBSE-PMT, etc. Write an advertisement for publication in a newspaper.
- 22. You are Mayank. You are leaving for Germany to pursue an engineering course and so wish to sell your high-definition motion gaming console with built-in 85 exciting real action wireless games. Draft a suitable advertisement for publication in 'Hindustan Times' advertising the sale of the gaming system, giving features and relevant details.
- 23. You are Neha/Naresh, a student of Class 11. You are concerned about rising cases of mobile addiction among teenagers. Write a letter to the Editor of a national daily expressing your views and suggesting ways to handle the problem.
- 24. Write a letter to the Editor of The Times of India expressing concern over the poor condition of public parks in your area. Suggest ways for their maintenance and improvement.
- 25. Write a letter to the Editor of a national daily expressing concern about the use of plastic bags despite a ban by the government. Suggest alternative solutions.

### Change the tense according to the instructions and maintain meaning.

- 26. She had been working at the company for10 years. (Change to Future Perfect Continuous)
- 27. I watch movies on weekends. (Change to Present perfect and add a sense of habit)
- 28. He was playing the guitar when the power went out. (Change to Past Perfect Continuous)

#### Use appropriate tense forms of the verbs given in brackets.

- 29. By the time the guests' (arrive), she (decorate) the hall completely.
- 30. If you \_\_ (pay) attention, you would have understood what I \_\_ (try) to explain.

### **Class XI Computer Science**

#### Draw a flowchart ,write an algorithm and pseudo code for the following questions:

- 1. To find the area and perimeter of a rectangle.
- 2. To calculate the area and the circumference of a circle.
- 3. To calculate the simple interest.
- 4. To check whether year is a lap year or not.
- 5. To check if a number is a positive or negative number.
- 6. To check if a number is an odd or even number.
- 7. To categorise a person as either child (< 13), teenager (13 but ≤ 20) or adult(>=20) based on specified.
- 8. To print all natural numbers up to n.
- 9. To print n odd numbers.
- 10. To print square of a number.
- 11. To accept 5 numbers and find their average.
- 12. To accept numbers till the user enters and then find their average.
- 13. To print squares of first n numbers.
- 14. To print the cube of a number.
- 15. To print to print cubes of first in numbers.
- 16. To find sum of n given numbers.
- 17. To find factorial of a given number.

## **XI BIOLOGY HOMEWORK**

1. Cyanobacteria and heterotrophic bacteria are classified under Eubacteria, which comes under the kingdom Monera as per the "Five Kingdom Classification" given by R.H. Whittaker. Even though

the above two bacteria are very different, is this grouping of the two types of taxa in the same kingdom justified? If so, why?

- 2. At a reproducing stage of their cycle, Ascomycetes fungi produce fruiting bodies like apothecium, perithecium or cleistothecium. How are these three different types of fruiting bodies different from each other? Also, give an example for each of them.
- 3. Apart from chlorophyll, algae have several other pigments in their chloroplast. What pigments are found in blue-green, red, and brown algae responsible for their characteristic colours?
- 4. Some symbiotic organisms are very good pollution indicators composed of chlorophyllous and nonchlorophyllous members. Describe them.
- 5. Laura visited a beach with her parents. She observed that the colour of the sea is blue but the colour of the tide is red. Her father told her that it is red due to the sudden increase in the number of a particular type of photosynthetic protist. What is the name of that protist? Discuss the salient features of the virus with the help of a diagram.
- 6. Polluted water bodies contain plants like Nostoc and Oscillitoria. Give reasons.
- 7. The plant body of the higher plants is well-differentiated and well developed too. Roots are the organs that are used for the process of absorption of water. What is the part equivalent to roots in the less developed lower plants?
- 8. Each group of pants has some phylogenetic significance that concerns evolution: Cycas, one of the few living members under gymnosperms, is also called a 'relic of the past. Can you generate a phylogenetic relationship of Cycas with any other group of plants that justifies the above statement?
- 9. Lichen is usually classified as an example of a 'symbiosis relation' in plants where an algal and a fungal species live together for their mutual benefit. Which of the following will happen if algal and fungal partners are separated?
- 10. Heterospory, i.e., the formation of two types of spores microspores and megaspores is a characteristic feature in the life cycle of a few pteridophytes and all spermatophytes. Do you think heterospory has some evolutionary significance in the plant kingdom?
- 11. Why are bryophytes also called the amphibians of the plant kingdom?
- 12. The respective male and female reproductive organs of several pteridophytes and gymnosperms are comparable to the floral structures of the angiosperms. Compare the various reproductive parts of pteridophytes and gymnosperms' reproductive structures of angiosperms.
- 13. Apart from Chlorophyll, algae have several other pigments in their chloroplast. What pigments are found in blue-green, red and brown algae responsible for their characteristic colours?
- 14. How do fungi differ from Algae?
- 15. The following parts form the digestive system of a frog. Arrange them in an ascending order beginning from the mouth to the aperture. Mouth, stomach, intestine, cloaca, oesophagus, buccal cavity, rectum, and cloacal aperture.
- 16. What is the major difference between cutaneous and pulmonary respiration in the lungs?
- 17. Draw the diagram of
- a. Male Reproductive system
- b. Female Reproductive system
- 18. What are the major functions of the cell wall?
- 19. List the different functions of the golgi bodies.
- 20. Describe the structure and functions of the organelles stated below-
- (a) nucleus (b) mitochondria (c) plastid

21. Justify the statement "Cell theory has shortcomings".

22. Why does, in a unicellular organism, the efficiency of a cell decrease with an increase in size?

23. What is the significance of the plasma membrane?

24. Who proposed cell theory? Also, give its postulates.

25. Why is the plasma membrane described as a" protein iceberg in the sea of lipids"?

26. Explain the fluid mosaic model given by Singer and Nicolson of the plasma membrane.

27. The classification system is changing very frequently. Discuss why?

28. From the identification of individuals and populations, what do we learn?

29. What are the three codes of Nomenclature?

30. Growth and reproduction are not taken as defining properties of all living beings.

# PHYSICS

1. The moon is observed from two diametrically opposite points A and B on earth. The angle  $\theta$  subtended at the moon by the two directions of observation is 1°54'. Calculate the distance of moon from earth. [Given the diameter of earth = 1.276 × 10<sup>7</sup>m]

2. The velocity of sound in air is 332m/s. If the units of length are km and unit of time is hour, using dimension calculate the value of velocity?

3. A physical quantity Q is given by

$$Q = \frac{A^2 \cdot B^{3/2}}{C^{+4} D^{1/2}}$$

The percentage error in A,B, C, D are 1%, 2%, 4%, 2% respectively. Find the percentage error in Q.

4. A body has an acceleration of 10 km/h<sup>2</sup>. Find its value in c.g.s system.

5. Two resistances  $r_1$ = (5.0 ± 0.2) W and  $r_2$ = (10.0± 0.1) W are connected in parallel. Find the value of equivalent resistance with limits of percentage error.

6. A particle moves along a straight line such that its displacement 's' at any time 't' is given by s =  $(t^3 - 6t^2 + 3t + 4)$  m. Find the velocity when acceleration is zero.

7. The displacement of a particle along x-axis is given by x = 4 + 8t + 14t2. Obtain its velocity and acceleration at t = 2s.

8. A boy stands at 39.2 m from a building and throws a ball which just passes through a window 19.6 m above the ground. Calculate the velocity of projection of the ball.

9. A hill is 500 m high. Supplies are to be sent across the hill using a canon that can hurl packets at a speed of 125 m/s over the hill. The canon is located at a distance of 800 m from the foot of hill and can be moved on the ground at a speed of 2 m/s, so that its distance from the hill can be adjusted. What is the shortest time in which a packet can reach on the ground across the hill? Take  $g = 10 \text{ m/s}^2$ .

10. The ceiling of a long hall is 25 m high. What is the maximum horizontal distance that a ball thrown with a speed of 40 m/s can go without hitting the ceiling of the hall?

11. A bullet fired at an angle of 30° with the horizontal hits the ground 3.0 km away. By adjusting its angle of projection, can one hope to hit a target 5.0 km away? Assume the muzzle speed to be fixed, and neglect air resistance.

12. A particle is projected with a velocity u so that its horizontal range is twice the greatest height attained. Find the horizontal range of it.

13. A physical quantity P is related to four observables a, b, c and d as follows:

$$P = a^3 b^2 / (\sqrt{c}d)$$

The percentage errors of measurement in a, b, c and d are 1%, 3%, 4% and 2%, respectively. What is the percentage error in the quantity P? If the value of P calculated using the above relation turns out to be 3.763, to what value should you round off the result?

14. The length and breadth of a rectangular block are 25.2 cm and 16.8 cm, which have both been measured to an accuracy of 0.1 cm. Find the area of the rectangular block.

15. To find the value of 'g by using a simple pendulum, the following observations were made: Length of thread I =  $(100 \pm 0.1)$  cm

Time period of oscillation  $T = (2 \pm 0.1)$  sec

Calculate the maximum permissible error in measurement of 'g'. Which quantity should be measured more accurately and why?

16. Obtain the dimensional formula for coefficient of viscosity.

17. The force experienced by a mass moving with a uniform speed v in a circular path of radius r experiences a force which depends on its mass, speed and radius. Prove that the relation is f=mv<sup>2</sup>/r.

18. A ball is thrown horizontally from the top of a cliff 80 meters high with an initial velocity of 20 m/s. Calculate the time it takes for the ball to reach the ground and the horizontal distance traveled.

**19**. Prove that the given point A, B, C are collinear using vector method:

A(6,-7,-1), B(2,-3,1) and C(4,-5,0).

20. A ball is kicked at an angle of 35° with the ground.

a) What should be the initial velocity of the ball so that it hits a target that is 30 meters away at a height of 1.8 meters?

b) What is the time for the ball to reach the target?

21. A ball kicked from ground level at an initial velocity of 60 m/s and an angle  $\theta$  with ground reaches a horizontal distance of 200 meters.

a) What is the size of angle  $\theta$ ?

b) What is time of flight of the ball?

22. Define time of flight and horizontal range?

23. Derive expressions for velocity and acceleration for uniform circular motion.

24. What are the resultants of the vector product of two given vectors given

by  $A^{\rightarrow} = 4i^{-2}j^{+}k^{-3}$  and  $B^{\rightarrow} = 5i^{+3}j^{-4}k^{-3}$ 

25. The position of a particle is given by  $x = 6t + 2t^3$ . Find out that its motion is uniform and non uniform.

26. Choose the motion in two dimension from the following.

(a) Motion of a train along a straight railway track

(b) An object falling freely under gravity close to the Earth.

(c) A particle moving along a curved path in a plane.

(d) Flying of a kite on a windy day.

27. If a particle has negative velocity and negative acceleration, its speed

(a) increases(b) decreases(c) remains same(d) zero

28. Convert the vector  $\vec{r} = 3i^+2j^r \rightarrow = 3i^+2j^h$  into a unit vector.

29. Define significant figures and explain their importance in measurements.

30. What is the difference between accuracy and precision?

## CHEMISTRY

1. Calculate the mass percent of calcium, phosphorus and oxygen in calcium phosphate  $Ca_3(PO_4)_2$ 

**2.**45.4 L of dinitrogen reacted with 22.7 L of dioxygen and 45.4 L of nitrous oxide was formed. The reaction is given below:

 $2N_2(g) + O_2(g) \rightarrow 2N_2O(g)$ 

Which law is being obeyed in this experiment? Write the statement of the law.

3. If two elements can combine to form more than one compound, the masses of one element that combine with a fixed mass of the other element, are in a whole-number ratio.

- 1. Is this statement true?
- 2. If yes, state according to which law?

3. Give one example related to this law.

4. The density of the 3 molal solution of NaOH is  $1.110 \text{ g mL}^{-1}$ . Calculate the molarity of the solution.

5. A vessel contains 1.6 g of dioxygen at STP (273.15K, 1 atm pressure). The gas is now transferred to another vessel at a constant temperature, where pressure becomes half of the original pressure. Calculate

(i) volume of the new vessel.

(ii) number of molecules of dioxygen.

6. A box contains some identical red coloured balls, labelled as A, each weighing 2 grams. Another box contains identical blue coloured balls, labelled as B, each weighing 5 grams. Consider the combinations AB, AB<sub>2</sub>, A<sub>2</sub>B and A<sub>2</sub>B<sub>3</sub>, and show that a law of multiple proportions is applicable.

7.Define the law of multiple proportions. Explain it with two examples. How does this law point to the existence of atoms?

8.What will be the mass of one atom of C-12 in grams?

9.Arrange s, p and d sub-shells of a shell in the increasing order of effective nuclear charge (Z<sub>eff</sub>) experienced by the electron present in them.

10.Calculate the total number of angular nodes and radial nodes present in the 3p orbital.

11. The arrangement of orbitals on the basis of energy is based upon their (n+1) value. Lower the value of (n+1), the lower is the energy. For orbitals having the same values of (n+1), the orbital with a lower value of n will have lower energy.

I. Based upon the above information, arrange the following orbitals in the increasing order of energy.

(a) 1s, 2s, 3s, 3p

(b) 4s, 3s, 3p, 4d

(c) 5p, 4d, 5d, 4f, 6s

(d) 5f, 6d, 7s, 7p

II. Based upon the above information, solve the questions given below :

(a) Which of the following orbitals has the lowest energy?

4d, 4f, 5s, 5p

(b) Which of the following orbitals has the highest energy?

5p, 5d, 5f, 6s, 6p

12.Which of the following will not show deflection from the path on passing through an electric field? Proton, cathode rays, electron, neutron.

13. The electronic configuration of the valence shell of Cu is  $3d^{10} 4s^1$  and not  $3d^9 4s^2$ . How is this configuration explained?

14.The Balmer series in the hydrogen spectrum corresponds to the transition from  $n_1 = 2$  to  $n_2 = 3,4,...$  This series lies in the visible region. Calculate the wave number of the line associated with the transition in the Balmer series when the electron moves to n = 4 orbit. ( $R_H = 109677$  cm<sup>-1</sup>)

15. According to de Broglie, the matter should exhibit dual behaviour, that is, both particle and wave like properties. However, a cricket ball of mass 100 g does not move like a wave when it is thrown by a bowler at a speed of 100 km/h. Calculate the wavelength of the ball and explain why it does not show wave nature.

16.Chlorophyll present in green leaves of plants absorbs light at 4.620 x 10<sup>14</sup> Hz. Calculate the wavelength of radiation in nanometer. Which part of the electromagnetic spectrum does it belong to?

17.What is the difference between the terms orbit and orbital?

18.Table-tennis ball has a mass of 10 g and a speed of 90 m/s. If speed can be measured with an accuracy of 4% what will be the uncertainty in speed and position?

19.What is the photoelectric effect? State the result of a photoelectric effect experiment that could not be explained on the basis of laws of classical physics. Explain this effect on the basis of quantum theory of electromagnetic radiation.

20.Threshold frequency, Vo is the minimum frequency that a photon must possess to eject an electron from a metal. It is different for different metals. When a photon of frequency  $1.0 \times 10^{15} \text{ s}^{-1}$  was allowed to hit a metal surface, an electron having  $1.988 \times 10^{-19}$  J of kinetic energy was emitted. Calculate the threshold frequency of this metal. Show that an electron will not be emitted if a photon with a wavelength equal to 600 nm hits the metal surface.

21.Explain why the electron gain enthalpy of fluorine is less negative than that of chlorine.

22. All transition elements are d-block elements, but all d-block elements are not transition.

23.Identify the group and valency of the element having atomic number 119. Also, predict the outermost electronic configuration and write the general formula of its oxide.

24.Among the elements B, Al, C and Si,

(i) which element has the highest first ionisation enthalpy?

(ii) which element has the most metallic character?

Justify your answer in each case.

25.Nitrogen has positive electron gain enthalpy whereas oxygen has negative. However, oxygen has lower ionisation enthalpy than nitrogen. Explain.

26.First member of each group of representative elements (i.e., s and p-block elements) shows anomalous behaviour. Illustrate with two examples.

27. p-Block elements form acidic, basic and amphoteric oxides. Explain each property by giving two examples and also write the reactions of these oxides with water.

28. How would you explain the fact that first ionisation enthalpy of sodium is lower than that of

magnesium but its second ionisation enthalpy is higher than that of magnesium?

29.Arrange the elements N, P, O and S in the order of-

(i) increasing first ionisation enthalpy.

(i) increasing non-metallic character.

Give reason for the arrangement assigned.

30. The radius of Na<sup>+</sup> cation is less than that of Na atom. Give reason.

- Find the range of the following functions given by : f(x) = |x 3|1
- Redefine the function  $f(x) = |x 2| + |2 + x|, -3 \le x \le 3$ . 2

<sup>3</sup> Solve: 
$$\frac{5-2x}{3} \le \frac{x}{6} - 5$$
.

Three consecutive vertices of a parallelogram ABCD are A (3, -1, 2), B (1, 2, -4) and 4 C(-1, 1, 2). Find the fourth vertex.

- Find the ratio in which the line segment joining the points (4, 8, 10) and (6, 10, -8) is 5 divided by the YZ- plane.
- Find the point on z-axis which is equidistant from (1, 5, 7) and (5, 1, -4). 6

7 Find the conjugate of : 
$$\frac{(3-2i)(2+3i)}{(1+2i)(2-i)}$$
. 2

8 Express 
$$i^{15} - 3i^7 + 2i^{109} + i^{100} - i^{17} + 5i^3$$
. in the form  $(a + ib)$ . 2

9 Express 
$$(\sqrt{5} - \sqrt{3}i)(\sqrt{5} + \sqrt{3}i)^2$$
 in the form  $(a + ib)$ .

<sup>10</sup> Find the magnitude and conjugate of the number 
$$\left(\frac{1}{1-4}\right)$$

$$\left(\frac{1}{1-4i}-\frac{2}{1+i}\right)\left(\frac{3-4i}{5+i}\right).$$

2

2

2

2

4

4

4

4

4

<sup>11</sup> Find the multiplicative inverse of the following : 
$$\frac{(i+1)(i+2)}{(i-1)(i-2)}$$

<sup>12</sup> If 
$$z_1 = 2 + i$$
,  $z_2 = 2 - 3i$ ,  $z_3 = 4 + 5i$ , evaluate  $\operatorname{Re}\left(\frac{z_1 \cdot \overline{z}_2}{z_3}\right)$  4

13 Find the relation between x and y of a complex variable z = x + iy satisfying the

condition : 
$$\left|\frac{z-3}{z+3}\right| = 2$$
  
<sup>14</sup> If  $p + iq = \frac{(a-i)^2}{2a-i}$  show that  $p^2 + q^2 = \frac{(a^2+1)^2}{4a^2+1}$ .

15 Find the real numbers x and y, if 
$$(x - iy)(3 + 5i)$$
 is the conjugate of  $-6 - 24i$ .

<sup>16</sup> If 
$$z_1, z_2, z_3$$
 are complex numbers such that  $|z_1| = |z_2| = |z_3| = \left|\frac{1}{z_1} + \frac{1}{z_2} + \frac{1}{z_3}\right| = 1$ , then

find the value of  $|z_1 + z_2 + z_3|$ .

Find the value of  $|z_1 + z_2 + z_3|$ . Find domain and range of the real function f(x), defined by and  $f(x) = \begin{cases} 1-x, & x < 0 \\ 1, & x = 0 \\ x-1, & x > 0 \end{cases}$ 17

draw its graph.

18 Find domain and range of 
$$f(x) = \frac{x-2}{x-1}$$
.

<sup>19</sup> I.Q. of a person is given by formula I.Q. = $\frac{M.A.}{CA} \times 100$ , where M.A. stands for mental	4
age and C.A., stands for chronological age. If $75 \le I.Q. \le 135$ for a group of 9 year	
children. Find the range of their mental age.	
Solve the inequality : $-3 < 4 - \frac{7x}{2} \le 18$ .	4
21 Solve the inequality : $2(x-1) < x+5$ , $3(x+2) > 2-x$	4
22 Find all pairs of consecutive odd natural numbers both of which are greater than 10, such that their sum is less than 40.	4
23In a class of 35 students, 17 have taken Mathematics, 10 have taken Mathematics but not Economics. Find the number of students who have taken both Mathematics and Economics and the number of students who have taken Economics but not Mathematics, if it is given that each student has taken either Mathematics or Economics or both.	4
<ul> <li>24Let U = {x ∈ N : x ≤ 8}, A = {x ∈ N : 5 &lt; x<sup>2</sup> &lt; 50} and B = {x ∈ N : x is prime number less than 10}. Draw a Venn diagram to show the relationship between the given sets. Hence list the elements of the following sets (i) A' (ii) B' (iii) A – B (iv) A ∩ B'</li> </ul>	4
<ul> <li>25In a class, 18 students took Physics, 23 students took Chemistry and 24 students took</li> <li>Mathematics. Of these 13 took both Chemistry and Mathematics, 12 took both Physics and Chemistry and 11 took both Physics and Mathematics. If 6 students offered all the three subjects, find : <ul> <li>(<i>i</i>) Total number of students in the class.</li> </ul> </li> </ul>	4
( <i>ii</i> ) How many took Mathematics but not Chemistry ?	
<ul> <li>(<i>m</i>) How many took exactly one of the 5 subjects?</li> <li>26 If L, M, N be the feet of the perpendicular segments drawn from a point P(3, 4, 6) on the XY, XZ, YZ planes respectively. What are the coordinates of L, M and N?</li> <li>(a) L(3, 0, 0), M(0, 0, 3), N(0, 6, 0)</li> <li>(b) L(3, 4, 0), M(3, 0, 6), N(0, 4, 6)</li> <li>(c) L(0, 0, 0), M(3, 0, 6), N(0, 4, 0)</li> <li>(d) L(3, 4, 6), M(3, 4, 6), N(3, 4, 6)</li> </ul>	1
27 The length of the longest piece of a string that can be stretched straight in a rectangular room whose dimensions are 10, 13 and 8 units is	1
Name the octant in which point $(4, -3, 5)$ lies.	1
Name the octant in which point $(4, -3, 5)$ lies.	1
30 Find the image of point $(-5, 4, -3)$ in the XOZ-plane.	1
31 Three vertices of a parallelogram ABCD are A (3, -1, 2), B (1, 2, -4) and C(-1, 1, 2). Find the coordinates of the fourth vertex.	1
32Three friends were having get together. Suddenly they decided to play with their names using sets. Name of friends were AARTI, CHARVI and AYSHA. They asked	4

(i) How letters used for AARTI are written in roster form as a set?

each other the following questions.

- (ii) What is the difference of set of letters of CHARVI and AYSHA?
- (iii) Form a union of sets taking the letters of names of friends.

Or

(iii) Form a set of intersection of sets taking the letters of names of friends.

33 After explaning operation on sets, Mathematics teacher in class wrote there sets as A =  $\{2, 3, 4, 5\}, B = \{6, 7, 8\},$ 

 $C = \{x : x \text{ is prime number less than 10}\}$ . She asked the students that the following questions will judge how much you have understood. She asked the students to write down the answers and later they can check from the answers written by teacher and give marks.

(i) Find  $A \cup B$ .

(ii) Find  $(A \cup B) \cap C$ .

(iii) Find (C - B).

Or

(iii) Find  $(A \cap C) - B$ .

34After the annual examinations some friends went to a mall for some purchases and on timing. One of the friends were keen to buy shirt and trousers. For shirt his choice of colours were "red, black, white, dark blue" and for trousers choice of colour were "black, white, grey" based on above information answer the following.

(i) How many combination of shirt and trousers are possible, irrespective of colour combinations?

(ii) With white and black shirt, how many combinations are possible of black trousers?

(iii) If we consider relation from set of shirts to set of trousers how many relations are possible?

### Or

(iii) If dark blue shirt is combined with any of trouser. In mathematical term will it represent a function?

35In the following questions, a statement of assertion (A) is followed by a statement of reason (R). Choose the correct answer out of the following choices.

Assertion (A):  $\{x : x \text{ contains } 28 \text{ or } 29 \text{ days in a month depending upon the year"} \}$  is a singleton set.

Reason (R): A set containing one element is known as a singleton set.

(a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A)

(b) Both Assertion (A) and Reason (R) are true and Reason (R) is not the correct explanation of Assertion (A)

- (c) Assertion (A) is true but Reason (R) is false
- (d) Assertion (A) is false but Reason (R) is true

36 In the following questions, a statement of assertion (A) is followed by a statement of reason (R). Choose the correct answer out of the following choices.

Assertion (A): In a set of prime numbers, any two elements are coprime.

1

1

4

Reason (R): HCF of two coprime numbers is 1.

(a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A)

(b) Both Assertion (A) and Reason (R) are true and Reason (R) is not the correct explanation of Assertion (A)

- (c) Assertion (A) is true but Reason (R) is false
- (d) Assertion (A) is false but Reason (R) is true
- 37In the following questions, a statement of assertion (A) is followed by a statement of reason (R). Choose the correct answer out of the following choices.

1

Assertion (A): Set of real numbers can be taken as universal set for the set of natural numbers, set of whole numbers, set of integers, set of rational numbers, set of irrational numbers.

Reason (R): The set of natural numbers, the set of whole numbers, the set of integers,

the set of rational numbers, the set of irrational numbers are all real numbers also.

(a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A)

(b) Both Assertion (A) and Reason (R) are true and Reason (R) is not the correct explanation of Assertion (A)

(c) Assertion (A) is true but Reason (R) is false

(d) Assertion (A) is false but Reason (R) is true