



# MANAV RACHNA INTERNATIONAL SCHOOL

## Scholarship Test Paper

### For

Students Studying in Grade –VIII (Session 2022-23)

Moving to Grade IX –Session 2023-24

**Date: 26.11.2022**

**Duration: 2 Hours**

**M.M.: 100**

### KINDLY FILL IN THE DETAILS

Name: \_\_\_\_\_  
Father's Name: \_\_\_\_\_  
Mother's Name: \_\_\_\_\_  
Examination Centre: Manav Rachna International School \_\_\_\_\_  
Name and Signature of the Invigilator: \_\_\_\_\_

### GENERAL INSTRUCTIONS:

This paper is divided into 4 sections

**SECTION – A: Logic and Reasoning: 20 marks** (Each question carries 2 marks)

**SECTION – B: English: 20 marks** (Marks have been mentioned against the questions)

**SECTION – C: Math: 30 marks** (Each question carries 1 mark)

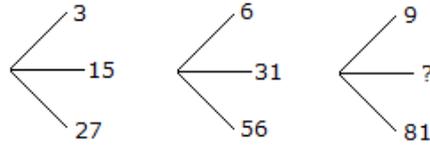
**SECTION – D: Science: 30 marks** (Each question carries 1 mark)

- All sections are compulsory.
- Read each question carefully before answering.
- **Objective Questions need to be tick marked in the question paper itself and submitted.**
- **Subjective Questions need to be attempted in the answer sheets provided and submitted.**

### SECTION A LOGIC AND REASONING

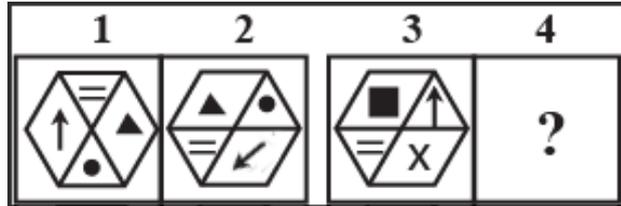
- Q1. One morning after sunrise Nivedita and Niharika were talking to each other face to face at Dolphin crossing. If Niharika's Shadow was exactly to the right of Nivedita. Which direction Niharika was Facing?
- a) North                      b) South                      c) East                      d) Data is inadequate
- Q2. A clock is started at noon. By 10 minutes past 5, the hour hand has turned through an angle of:
- a)  $145^\circ$                       b)  $150^\circ$                       c)  $155^\circ$                       d)  $160^\circ$

Q3. Which one will replace the question mark?



- a) 45                      b) 41                      c) 32                      d) 40

Q4. Figures 1 and 2 are related in a particular manner. Establish the same relationship between figures 3 and 4 by choosing a figure from amongst the options, which would replace the question mark (?).

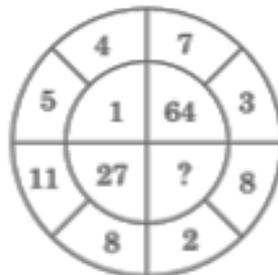


- a)      b)      c)      d)

Q5. A has 3 children. B is the brother of C and C is the sister of D, E who is the wife of A is the mother of D. There is only one daughter of the husband of E. How is D related to B. Select the correct option from the given alternatives.

- a) Sister                      b) Mother                      c) Father                      d) Brother

Q6. Find the missing number.



- a) 125                      b) 8                      c) 0                      d) 216

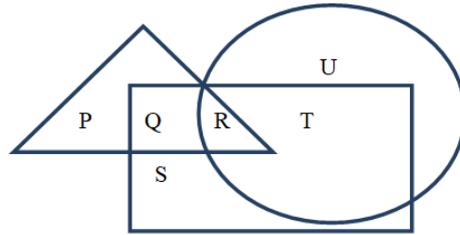
Q7. In the given question find out the alternative which will replace the question mark. BCFG : HILM: NORQ :?

- a) TXWU                      b) TXUW                      c) TUXW                      d) TVWX

Q8. If Q means 'add to', J means 'multiply by', T means 'subtract from' and K means 'divide by', then 26 K 2 Q 3 J 6 T 4 = ?

- a) 10                      b) 28                      c) 30                      d) 27

- Q9. In the following figure, triangle represents 'girls' square, represents 'players' and circle represents 'coach'. Which part of the diagram represents the girls who are players but not coach?



- a) P                      b) Q                      c) R                      d) S
- Q10. P, Q, R, S, T, U, V and W sitting round the circle and are facing the centre.
- I. P is second to the right of T who is the neighbour of R and V
  - II. S is not the neighbour of P.
  - III. V is the neighbour of U
  - IV. Q is not between S and W, and W is not between U and S. Who two of the following are not neighbours?
- a) RV                      b) UV                      c) RP                      d) QW

## SECTION B ENGLISH

- Q1. Read the passage given below carefully and answer the questions that follow. (10 Marks)

Have you ever failed at something so miserably that the thought of attempting to do it again was the last thing on your mind?

If your answer is yes, then you should understand that you are not a robot. Unlike robots, we human beings have feelings, emotions, and dreams. We are all meant to grow despite our circumstances and limitations. Flourishing and trying to make our dreams come true feels great when life goes our way. But what happens when it does not? What happens when you fail despite all your hard work? Do you stay down and accept defeat or do you get up again? If you tend to persevere and keep going, you have what experts call 'grit'.

Falling down or failing is one of the most agonising, embarrassing, and scary human experiences. But it is also one of the most educational, empowering, and essential parts of living a successful and fulfilling life. Did you know that perseverance (grit) is one of the seven qualities that has been described as the key to personal success and betterment in society? The other six are curiosity, gratitude, optimism, self-control, social intelligence, and zest. Thomas Edison is an example of grit for trying more than 1,000 times to invent the light bulb. If you are reading this with the lights on in your room, you will realise the importance of his success. When asked why he kept going despite hundreds of failures, he merely stated that they had not been failures, they were hundreds of attempts toward creating the light bulb. This statement not only revealed his grit but also his optimism for looking at the bright side.

Grit can be learnt to help you become more successful. One of the techniques that help is mindfulness. Mindfulness is a practice that makes an individual stay at the moment by bringing awareness of his or her experience without judgement. This practice has been used to quieten the

noise of fears and doubts. Through this simple practice of mindfulness, individuals have the ability to stop the self-sabotaging downward spiral of hopelessness, despair, and frustration.

What did you do to overcome the negative and self-sabotaging feelings of failure? Reflect on what you did, and try to use those same powerful resources to help you today.

1. The reason why you are not a robot is that: (1)
  - (a) You fail miserably at tasks
  - (b) Failure and success can affect your emotions
  - (c) You work hard
  - (d) You have limitations
  
2. Choose the option that best captures the central idea of the passage from the given quotes. (1)

“What is the point of being alive if you don’t at least try to do something remarkable?” (1) —John Green	“Mistakes are the portals of discovery.” (2) —James Joyce	“Failure should be our teacher, not our undertaker. Failure is delay, not defeat. It is a temporary detour, not a dead end.” (3) —Denis Waitley	“A person who never made a mistake never tried anything new.” (4) —Albert Einstein
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- a) Option (1)                      b) Option (2)                      c) Option (3)                      d) Option (4)

3. What is the tone of the following context: “Falling down or failing is one of the most... educational, empowering, and essential parts of living a successful and fulfilling life.”? (1)
  - a) Humorous                      b) Optimistic                      c) Horrifying                      d) Solemn
  
4. Which of the following sentences makes the correct use of “grit”, as used in the passage? (1)
  - a) Get rid of that grit in your shoes.                      b) She had a bit of grit in her eye.
  - c) The road had been covered with grit.                      d) Her grit never made her give up.
  
5. What do you understand from this line, “Falling down or failing is one of the most agonizing, embarrassing, and scary human experiences.”? (1)
  - a) Falling down makes us angry.                      b) Failure can deeply affect our emotions.
  - c) Stay positive and be optimistic.                      d) Self-control is empowering.
  
6. Choose the option that correctly states the meaning of ‘social intelligence’ as implied in the passage. (1)
  - a) Knowing others                      b) Knowing oneself and others
  - c) Knowing oneself                      d) Knowing one’s surroundings
  
7. Which quality is highlighted in the passage? (1)
  - a) leadership                      b) entrepreneurship
  - c) perseverance                      d) ownership

8. Whose example is used to explain the importance of perseverance and optimism? (1)
9. Find antonyms of (1)  
a) wither - b) assist -
10. Give a suitable title to the passage. (1)

**Q2. Writing Task**

**(10 Marks)**

Write a paragraph in 150-200 words on “The Future Belongs to Artificial Intelligence.”

**OR**

When a country develops its technology, the traditional skills and ways of life die out. It is pointless to try and keep them alive. Write a paragraph in 150-200 words expressing your views about this statement.

**SECTION C  
MATH**

- Q1. What is the probability of getting 53 Fridays in a leap year?  
a)  $\frac{1}{7}$  b)  $\frac{53}{366}$  c)  $\frac{2}{7}$  d)  $\frac{53}{365}$
- Q2. From a Pack of 52 well shuffled cards one card is drawn what is the probability that it is either king or Red colour.  
a)  $\frac{7}{13}$  b)  $\frac{6}{13}$  c)  $\frac{26}{52}$  d)  $\frac{4}{52}$
- Q3. In the five digit number 1b6a3, a is the greatest single digit perfect cube and twice of it exceeds b by 7. Then the sum of the number and its cube root is  
a) 18700 b) 11862 c) 19710 d) 25320
- Q4. If a sphere is inscribed in a cube, then the ratio of the volume of the cube to the volume of sphere will be:  
a)  $\pi : 6$  b)  $6 : \pi$  c)  $\pi : 3$  d)  $4 : \pi$
- Q5. A contractor undertook to do a certain piece of work in 9 days. He employed certain number of men, but 6 of them being absent from the very first day, the rest could finish the work in 15 days. The number of men originally employed were  
a) 12 b) 15 c) 18 d) 24

- Q6. A 5-digit number  $xy235$  is divisible by 3 such that  $x+y < 5$  where  $x$  and  $y$  are single digit. Then possible value of  $(x,y)$  are
- a) (1,1) or (4,0)      b) (1,1) or (2,0)      c) (1,1) or (0,2)      d) (2,0) or (0,2)
- Q7. If  $5^{\frac{1}{a}} = 7^{\frac{1}{b}} = 35^{\frac{1}{c}}$ , find  $c$  in terms of  $a$  and  $b$ .
- a)  $\frac{ab}{a+b}$       b)  $a + b$       c)  $\frac{ab}{a-b}$       d)  $a - b$
- Q8. Factorization of  $x^2 - 1 - 2a - a^2$  is
- a)  $(x - a - 1)(x + a - 1)$       b)  $(x + a + 1)(x - a - 1)$   
c)  $(x + a + 1)(x - a + 1)$       d)  $(x - a + 1)(x + a - 1)$
- Q9. The value of  $\sqrt{8 + 2\sqrt{8 + 2\sqrt{8 + \dots \dots \infty}}}$  is:
- a) 8      b) 10      c) 11      d) 4
- Q10. Solve:  $\frac{x-b-c}{a} + \frac{x-c-a}{b} + \frac{x-a-b}{c} = 3$
- a)  $a-b-c$       b)  $a+b+c$       c)  $b-c-a$       d)  $-a-b-c$
- Q11. The value of  $\sqrt{\frac{3+\sqrt{5}}{3-\sqrt{5}}}$  is
- a) 2.236      b) 2.142      c) 2.618      d) 2.168
- Q12. The difference between the compound interest and the simple interest on ₹ 42000 for two years is ₹ 105 at the same rate of interest per annum. Find the rate of interest.
- a) 7%      b) 10%      c) 5%      d) 8%
- Q13. The length of a room is 50 % more than its breadth. The cost of carpeting the room at the rate of ₹ 38.50/  $m^2$  is ₹ 924 and the cost of painting the walls at the rate of ₹ 5.50/ $m^2$  is ₹ 1320. Find the dimensions of the room.
- a)  $4m \times 6m \times 10m$       b)  $3m \times 6m \times 12m$   
c)  $4m \times 6m \times 8m$       d)  $4m \times 6m \times 12m$
- Q14. The simplified form of  $\frac{x^p}{x^p+x^q} + \frac{1}{x^{p-q}+1}$  is
- a) 1      b) 2      c) 3      d) 0
- Q15. When the sum of a 3-digit number  $abc$  and numbers obtained by changing the order of the digits cyclically is divided by 111, then quotient is
- a) 37      b)  $a+b+c$       c)  $a+b+c$       d) 3

- Q16. Which of the following is one of the factors of  $12(a^2+7a)^2 - 8(a^2+7a)(2a-1) - 15(2a-1)^2$ ?
- (i)  $(2a^2+8a+3)$       (ii)  $(6a^2+5)(2a-5)$       (iii)  $(3a+5)$
- a) Only (i)      b) Both (i) and (ii)      c) Only (ii)      d) all (i) (ii) and (iii)
- Q17. If 270 kg of corn would feed 42 horses for 21 days, for how many days would 360 kg of it feed 21 horses?
- a) 30 days      b) 31.5 days      c) 56 days      d) 10 days
- Q18. In a 2 digit number, sum of digits is 7. If the difference of 2 digit number and number obtained by reversing the digit is 9, find the number.
- (a) 25      (b) 52      (c) 34      (d) 43
- Q19. If  $\sqrt{5^n} = 125$ , then  $5^{\sqrt[3]{64}}$
- a) 25      b)  $\frac{1}{125}$       c) 625      d)  $\frac{1}{5}$
- Q20. Factorise  $4(x+y)^2 - 28y(x+y) + 49y^2$ .
- a)  $(2x+3y)^2$       b)  $(2x-3y)^2$       c)  $(2x+5y)^2$       d)  $(2x-5y)^2$
- Q21. The distance between two stations is 340 km. Two trains start simultaneously from these stations on parallel tracks to cross each other. The speed of one of them is greater than that of the other by 5 km/hr. If the distance between the two trains after 2 hours of their start is 30 km, the speed of each train in km/hr is:
- a) 75, 80      b) 70, 75      c) 80, 85      d) 65, 70
- Q22. 1200 soldiers in a fort had enough food for 28 days. After 4 days, some soldiers were transferred to another fort and thus the food lasted now for 32 days. Number of soldiers left the fort are:
- a) 285      b) 290      c) 300      d) 310
- Q23. The salary of an officer has been increased by 50%. By what percent the new salary must be reduced to restore the original salary?
- a) 30%      b) 33%      c)  $33\frac{1}{2}\%$       d)  $33\frac{1}{3}\%$
- Q24. A rectangular piece is 20 m long and 15 m wide. From its four corners, quadrants of radii 3.5 m have been cut. The area of the remaining part is:
- a)  $185.5 \text{ m}^2$       b)  $261.5 \text{ m}^2$       c)  $280 \text{ m}^2$       d)  $342.75 \text{ m}^2$



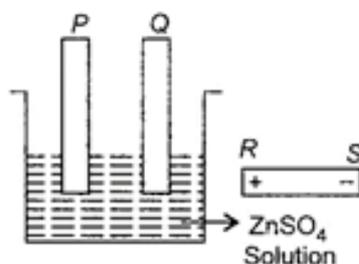
- Q3. When electricity is passed through calcium nitrate solution in water, what is likely to be formed at the cathode and why?
- Hydrogen because it is a very reactive than calcium
  - Calcium because it is a very reactive than hydrogen
  - Hydrogen because it is less reactive than calcium
  - Calcium because it is less reactive than hydrogen.

- Q4. Read the given statements and select the correct option.

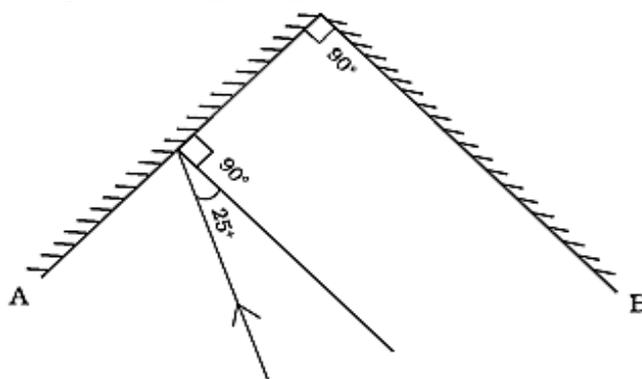
Statement 1: Saturn could float if put in water.

Statement 2: Saturn is less dense than water.

- Both statements 1 and 2 are true and statement 2 is the correct explanation of statement 1.
  - Both statements 1 and 2 are true but statement 2 is not the correct explanation of statement 1.
  - Statement 1 is true but statement 2 is false.
  - Both statements 1 and 2 are false.
- Q5. The diagram shows a beaker containing a solution of zinc sulphate and two carbon electrodes. A battery is placed next to it. In order that the electrode P be plated with zinc,



- P must be connected to S and Q to R
  - P must be connected to Q and S to R
  - P must be connected to R and Q to S
  - P and Q must be connected to R.
- Q6. Two mirrors A and B are placed at right angles to each other as shown in Fig.



A ray of light incident on mirror A at an angle of  $25^\circ$  falls on mirror B after reflection. The angle of reflection for the ray reflected from mirror B would be

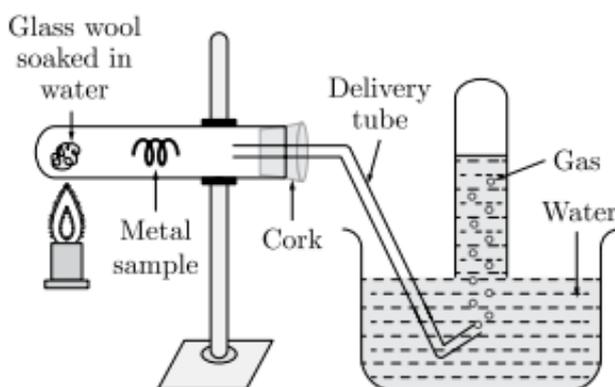
- $25^\circ$
  - $50^\circ$
  - $65^\circ$
  - $115^\circ$
- Q7. A rectangular wooden block has length, breadth and height of 50 cm, 25 cm and 10 cm, respectively. This wooden block is kept on ground in three different ways, turn by turn. Which of the following is the correct statement about the pressure exerted by this block on the ground?
- The maximum pressure is exerted when the length and breadth form the base

- b) The maximum pressure is exerted when length and height form the base
- c) The maximum pressure is exerted when breadth and height form the base
- d) The minimum pressure is exerted when length and height form the base

Q8. 2 mL each of concentrated HCl, HNO<sub>3</sub> and a mixture of concentrated HCl and concentrated HNO<sub>3</sub> in the ratio of 3 : 1 were taken in test tubes labelled as A, B and C. A small piece of metal was put in each test tube. No change occurred in test tubes A and B but the metal got dissolved in test tube C respectively. The metal could be

- a) Al
- b) Au
- c) Cu
- d) Pt

Q9. In the following practical set which of the following gas is emitted?



- a) Hydrogen
- b) Carbon monoxide
- c) Carbon dioxide
- d) Nitrogen

Q10. Which of the following represents the correct decreasing order of densities of the given liquids?

- a) Lubricating oil > diesel oil > kerosene > Petrol
- b) Petrol > kerosene > diesel oil > lubricating oil
- c) Kerosene > diesel oil > lubricating oil > petrol
- d) Petrol > diesel oil > lubricating oil > kerosene

Q11. Read the given statements and mark the appropriate answer.

Statement 1 : Magnesium and charcoal are combustible substances.

Statement 2 : A chemical process in which a substance reacts with oxygen to give off heat is called combustion.

- a) Both statements 1 and 2 are true and statement 2 is correct explanation of statement 1.
- b) Both statements 1 and 2 are true and statement 2 is not a correct explanation of statement 1.
- c) Statement 1 is true and statement 2 is false.
- d) Both statements 1 and 2 are false.

Q12. Which of the following cannot fix atmospheric nitrogen in the soil?

- a) Rhizobium
- b) Clostridium
- c) Azotobacter
- d) Penicillin

Q13. Paramecium is slipper-shaped \_\_\_\_\_ and possesses a \_\_\_\_\_ for its transport.

- a) bacteria, cilia
- b) algae, flagella
- c) protozoa, cilia
- d) fungi, flagella

Q14. The empty blank looking structure in the cytoplasm is  
 a) vacuole                      b) plastids                      c) plasma membrane    d) nucleus

Q15. Match the Column (A) with the Column (B)

(A)	(B)
a. Digestive bag of the cell	P. Endoplasmic Reticulum
b. Storage sacs of the cell	Q. Nucleus
c. Control room of the cell	R. Vacuole
d. Packaging and dispatching unit of the cell	S. Lysosome
e. Transporting channels of the cell	T. Golgi bodies

- a) a-P, b- R, c-T, d-Q, e-S                      b) a-S, b- R, c-Q, d-T, e-P  
 c) a-S, b- R, c-T, d-Q, e-P                      d) a-S, b- T, c-P, d-Q, e-R

Q16. The green light of the sunlight is blocked. How will the photosynthesis be affected in green plants?

- a) The plants reflect back the green light because of which they appear green in colour. Therefore, photosynthesis will not be affected if green light is blocked.  
 b) The plants absorb the green light because of which they appear green in colour. Therefore, plants will fail to do photosynthesis  
 c) The plants reflect back the white light. Therefore, photosynthesis will not be affected  
 d) None of the above

Q17. The given list represents some of the events that occur in mature human female.

- I. Egg is produced by ovary  
 II. Placenta provides nourishment to the embryo  
 III. Zygote attaches to the uterus and starts dividing  
 IV. The egg is fertilized by sperms in the oviduct

In what sequence do the listed events occur?

- a) I, II, III and IV                      b) II, I, IV and III  
 c) I, IV, III and II                      d) IV I, III and II

Q18. Complete the following analogy

External Fertilization:   x   :: Internal Fertilization:   y  

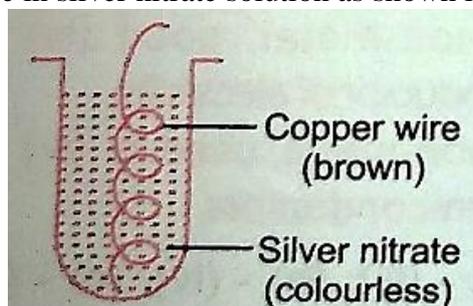
- a) x- starfish and jelly fish y- birds and reptiles  
 b) x- birds and fishes y- Star fish and jelly fish  
 c) x- mammals and fishes y- prawns and jelly fish  
 d) x- frogs and fishes y- Star fish and jelly fish

Q19.   X   that plays an important role in heredity is a part of   Y  , which in turn is a part of   Z  .

- a) X- Gene, Y- Chromosome, Z- DNA                      b) X- Gene, Y- DNA, Z- Chromosome  
 c) X- DNA, Y- Gene, Z- Chromosome                      d) X- Gene, Y- Chromosome, Z- Gene

- Q20. Which of the following factors contribute to the maximum increase in the crop yield?
- I. Soil Quality
  - II. High quality seeds
  - III. Water availability
  - IV. High soil salinity
  - V. Duration of maturation
- a) I, III and V      b) II, IV and V      c) II, III and IV      d) I, II and III
- Q21. In which of the following organism buds do not separate out but remain attached to the parent organism?
- a) Yeast      b) corals      c) hydra      d) amoeba
- Q22. Read the following statements and state (T) for true and (F) for false.
- (i) The crude oil pumped out from a well is black liquid hence it is called black gold.
  - (ii) Crude oil contains different fractions which have different boiling points.
  - (iii) Crude oil is refined in fractionating tower.
  - (iv) During refining of petroleum, the fraction with lowest boiling point condenses at the bottom of the fractionating tower.
- |    | (i) | (ii) | (iii) | (iv) |
|----|-----|------|-------|------|
| a) | T   | T    | F     | F    |
| b) | F   | F    | T     | F    |
| c) | F   | T    | T     | F    |
| d) | T   | T    | T     | F    |
- Q23. Properties of substances W, X, Y and Z are listed below:  
 W : A liquid metal  
 X : A liquid non-metal  
 Y : A gaseous non-metal  
 Z : A non-metal which conducts electricity  
 W, X, Y and Z are respectively.
- a) Iron, iodine, hydrogen and oxygen
  - b) Gold, sulphur, chlorine and hydrogen
  - c) Copper, phosphorus, nitrogen and carbon
  - d) Mercury, bromine, oxygen and graphite.

- Q24. Vidisha placed a copper wire in silver nitrate solution as shown in the figure.



- Which of the following represents the correct observation?
- a) The colour of the solution turned blue and precipitate of solid silver was obtained.
  - b) Colour of solution turned green and copper wire turned blue.
  - c) There was no change in the colour of solution or colour of the wire.
  - d) Colour of the solution became silver and there was no change in the colour of copper wire.

- Q25. Read the given statements and select the correct option.  
 Statement 1: Kerosene oil and wood do not catch fire on their own at room temperature.  
 Statement 2: A combustible material cannot catch fire as long as the temperature is lower than its ignition temperature.
- Both statements 1 and 2 are true and statement 2 is the correct explanation of statement 1.
  - Both statements 1 and 2 are true but statement 2 is not the correct explanation of statement 1.
  - Statement 1 is true and statement 2 is false
  - Both statements 1 and 2 are false.
- Q26. A brief information about three different plastics is given below:  
 X : Thermoplastic which can be rolled into sheets  
 Y: Thermoplastic which is used as a covering for electric wires.  
 Z : Thermosetting which is used for making plugs and switches.  
 Identify X, Y and Z
- |    | X                  | Y                  | Z         |
|----|--------------------|--------------------|-----------|
| a) | Melamine           | Teflon             | Bakelite  |
| b) | Bakelite           | Melamine           | Polythene |
| c) | Polythene          | Polyvinyl chloride | Bakelite  |
| d) | Polyvinyl chloride | Polythene          | Melamine  |
- Q27. The point on the earth's surface directly above the focus is called:
- Focus
  - Epicenter
  - Hypocenter
  - All of these
- Q28. 4.5 kg of fuel P on complete combustion produced 180,000 kJ of heat while 4.75 kg of fuel Q on complete combustion produced 190,000 kJ of heat. Which fuel has higher calorific value?
- P
  - Q
  - Both have equal calorific value.
  - Cannot be predicted
- Q29. When a glass rod is rubbed with a piece of silk cloth
- Both cloth and the rod acquire positive charge
  - Rod becomes positively charged while the cloth has a negative charge
  - Rod becomes negatively charged while the cloth has a positive charge
  - Both cloth and the rod acquire negative charge.
- Q30. Match the items given in column I suitably with those given in column II.
- | Column I           | Column II         |
|--------------------|-------------------|
| A. Carbon rod      | 1. Electrolyte    |
| B. LED             | 2. Poor conductor |
| C. Salt solution   | 3. Electrode      |
| D. Distilled water | 4. Tester         |
- A- 4, B-3, C-2, D-1
  - A- 3, B-4, C-2, D-1
  - A- 3, B-4, C-1, D-2
  - A- 2, B-1, C-2, D-4



