



# MANAV RACHNA INTERNATIONAL SCHOOL

## Scholarship Test Paper

### For

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

Moving to Grade VIII - 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)

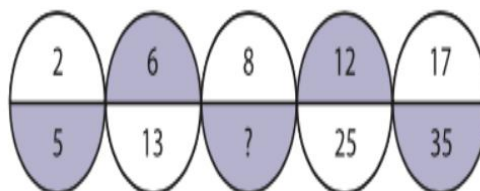
**SECTION – C: Math: 30 marks** (Each question carries 1 mark)

**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. What is the missing number in the given series below?

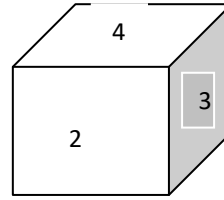
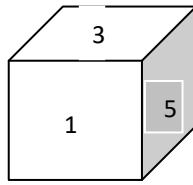
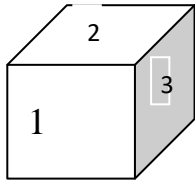


- a) 17                      b) 27                      c) 35                      d) 41

Q2. A boy observes the reflection of a wall clock in a mirror: The time observed by the boy in the mirror is 4 hours 20 minutes. What is the actual time shown on the clock?

- a) 7 hours 15 minutes                      c) 7 hours 48 minutes  
b) 7 hours 40 minutes                      d) 7 hours 35 minutes

Q3. A dice is thrown three times and its three different positions are given below Find the number on the face opposite the face showing 3.



- a) 1                                      b) 4                                      c) 5                                      d) 6

Q4. P, Q, R and S are four men. P is the oldest but not the poorest. R is the richest but not the oldest. Q is older than S but not than P or R. P is richer than Q but not than S. The four men can be ordered (descending) in respect of age and richness, respectively, as

- a) PQRS, RPSQ                      b) PRQS, RSPQ                      c) PRQS, RSQP                      d) PRSQ, RSPQ

Q5. Madan is fourteenth from the right end in a row of 40 boys. What is his position from the left end? Select the correct answer from the given options.

- a) 25<sup>th</sup>                                      b) 26<sup>th</sup>                                      c) 27<sup>th</sup>                                      d) 28<sup>th</sup>

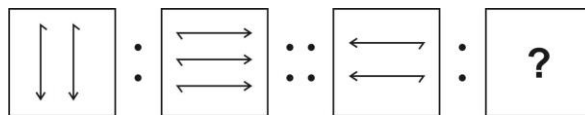
Q6. It was Sunday on Jan. 1, 2006. What was the day of the week on June 17th, 1998?

- a) Monday                                      b) Tuesday                                      c) Wednesday                                      d) Thursday

Q7. Some children are sitting in a row. Arjun is sitting fourteenth from the left and Mahi is seventh from the right. If there are four children between Arjun and Mahi, how many students are there in the row?

- a) 22                                      b) 23                                      c) 24                                      d) 25

Q8. Identify the missing figure.



- a)      b)      c)      d)

Q9. Introducing a boy, a girl said, "He is the son of the daughter of the father of my uncle." How is the boy related to the girl?

- a) Brother                                      b) nephew                                      c) Uncle                                      d) Son in law

Q10. A and B are good in Mathematics, English and Biology. B and C are good in Biology and Physics. C and D are good in Physics and Chemistry. D and A are good in English, Mathematics and Chemistry. Who is not good in Biology?

- a) A                                      b) B                                      c) D                                      d) C

**SECTION B**  
**ENGLISH**

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

Numerous incredible innovations are initially greeted with ridicule and disbelief. The invention of the airplane was no exception. Although many people who heard about the first powered flight on December 17, 1903 were exhilarated and impressed, others responded with peals of laughter. The idea of flying an aircraft was repulsive to some people. Such people called Wilbur and Orville Wright, the inventors of the first flying machine, impulsive fools. Negative reactions, however, did not stop the Wrights. Impelled by their desire to succeed, they continued their experiments in aviation.

Orville and Wilbur Wright had always had a compelling interest in aeronautics and mechanics. As young boys they earned money by making and selling kites and mechanical toys. Later, they designed a newspaper-folding machine, built a printing press, and operated a bicycle-repair shop. In 1896, when they read about the death of Otto Lilienthal, the brothers' interest in flight grew into a compulsion.

Lilienthal, a pioneer in hang-gliding, had controlled his gliders by shifting his body in the desired direction. This idea was repellent to the Wright brothers, however, and they searched for more efficient methods to control the balance of airborne vehicles. In 1900 and 1901, the Wrights tested numerous gliders and developed control techniques. The brothers' inability to obtain enough lift power for the gliders almost led them to abandon their efforts.

After further study, the Wright brothers concluded that the published tables of air pressure on curved surfaces must be wrong. They set up a wind tunnel and began a series of experiments with model wings. Because of their efforts, the old tables were repealed in time and replaced by the first reliable figures for air pressure on curved surfaces. This work, in turn, made it possible for the brothers to design a machine that would fly. In 1903 the Wrights built their first airplane, which cost less than \$1,000. They even designed and built their own source of propulsion—a lightweight gasoline engine.

By 1905, the Wrights had perfected the first airplane that could turn, circle, and remain airborne for half an hour at a time. They were the first ones to build a full-size machine that could fly under its own power. As the contributors of one of the most outstanding engineering achievements in history, the Wright brothers are accurately called the fathers of aviation.

1. What was the response of the people when they heard about the first powered flight? (2)
2. List the errands which helped Orville and Wilbur Wright mint money at a very young age. (2)
3. Why did Wright brothers' idea of controlling airborne vehicles dash out in the beginning? (2)
4. Which idea prompted the successful flight of a working machine? (2)
5. Find out suitable antonym of 'introduce' from the passage. (1)
6. What title would you give to the Wright brothers? (1)

**Q2. Writing Task (10 Marks)**

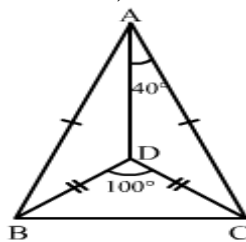
Write a paragraph in about 150-200 words on the topic 'India - An Emerging Global Economy'.

**OR**

While some believe that the present Generation is the most diverse, educated and idealistic generation, there are others who feel that this generation is most lazy, coddled and disconnected. Write a paragraph in about 150-200 words on the topic 'Digging in to the Minds of Current Generation'.

**SECTION C**  
**MATH**

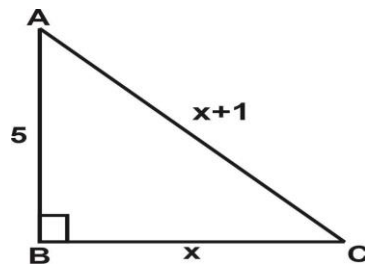
- Q1. Which of the following numbers does not lie between  $\frac{4}{5}$  and  $\frac{7}{13}$ ?
- a)  $\frac{1}{2}$                       b)  $\frac{2}{3}$                       c)  $\frac{3}{4}$                       d)  $\frac{5}{7}$
- Q2. Rakesh does the homework 5 hour, 7 hour, 8 hour respectively on three consecutive days. How many hours does he do the homework daily on average?
- a)  $3\frac{2}{3}$                       b)  $6\frac{2}{3}$                       c)  $7\frac{2}{3}$                       d)  $5\frac{2}{3}$
- Q3. By how much is three-fifth of 350 greater than four-seventh of 210?
- a) 95                      b) 110                      c) 120                      d) 90
- Q4. If  $1.5x = 0.04y$ , then the value of  $\frac{y-x}{y+x}$  is:
- a)  $\frac{730}{77}$                       b)  $\frac{73}{77}$                       c)  $\frac{7.3}{77}$                       d)  $\frac{0.73}{7}$
- Q5. Geeta is facing South-West. After making a  $225^\circ$  clockwise rotation followed by a  $315^\circ$  anticlockwise rotation, the direction she is facing now is:
- a) North                      b) north east                      c) South east                      d) North west
- Q6. Area of a right angled triangle is 6 sq. cm and its perimeter is 12cm. Length of its hypotenuse (in cm) is:
- a) 5                      b) 6                      c) 7                      d) 8
- Q7. The number of straight lines that can be obtained by joining any two vertices of a heptagon is:
- a) 21                      b) 17                      c) 10                      d) 7
- Q8.  $ABC$  and  $DBC$  are both isosceles triangles on a common base  $BC$  such that  $A$  and  $D$  lie on the same side of  $BC$ . If  $\angle DAC = 40^\circ$  and  $\angle BDC = 100^\circ$ ; then find  $\angle ADB$ .



- a)  $65^\circ$                       b)  $130^\circ$                       c)  $105^\circ$                       d)  $45^\circ$

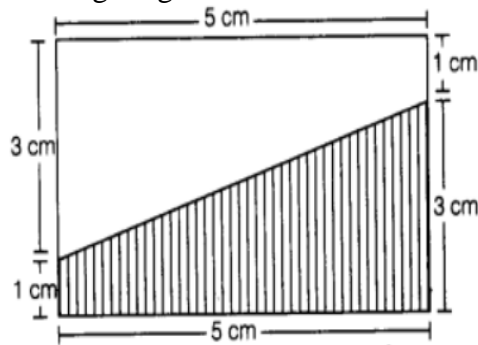
- Q9. A rectangular piece is 20 m long and 15 m wide. From its four corners, quadrants of radii 3.5 m have been cut. Find the area of the remaining part.
- a)  $261.5 \text{ m}^2$                       b)  $126.5 \text{ m}^2$                       c)  $500 \text{ m}^2$                       d)  $225.5 \text{ m}^2$
- Q10. The value of  $a^b - b^a$ , if  $a=3$  and  $b=7$  is
- a) 1825                      b) 1840                      c) 1844                      d) 1850
- Q11. If 8 pens costs you 14 rupees more than that of 6 pens, then find the cost of 12 pens.
- a) 150 rupees                      b) 84 rupees                      c) 99 rupees                      d) 96 rupees
- Q12. In triangles ABC and PQR,  $AB = AC$ ,  $\angle C = \angle P$  and  $\angle B = \angle Q$ . The two triangles are
- a) isosceles but not congruent                      b) isosceles and congruent  
c) congruent but not isosceles                      d) neither congruent nor isosceles
- Q13. If the areas of two circles are in the ratio 25:36, then the ratio of their circumferences is \_\_\_\_\_
- a) 6:5                      b) 3:4                      c) 4:3                      d) 5:6
- Q14. Simplify:  $\frac{87.4 \times 6.5 - 0.1}{28.4 \times 9.8 + 5.68}$
- a)  $\frac{1}{2}$                       b) 3                      c) 2                      d) 4
- Q15. The value of  $\frac{1}{4} + \frac{1}{4 \times 5} + \frac{1}{4 \times 5 \times 6}$  correct to 4 decimal places is
- a) 0.3075                      b) 0.3082                      c) 0.3083                      d) 0.3085
- Q16. An isosceles right triangle has area  $8 \text{ cm}^2$ . The length of its hypotenuse is
- a)  $\sqrt{32} \text{ cm}$                       b)  $\sqrt{16} \text{ cm}$                       c)  $\sqrt{48} \text{ cm}$                       d)  $\sqrt{24} \text{ cm}$
- Q17. In a triangle ABC, if  $\angle A - \angle B = 33^\circ$  and  $\angle B - \angle C = 18^\circ$ , then the measure of  $\angle A$
- a)  $88^\circ$                       b)  $55^\circ$                       c)  $37^\circ$                       d)  $60^\circ$
- Q18. A particular star is at a distance of about  $8.1 \times 10^{13} \text{ km}$  from the Earth. Assuming that light travels at  $3 \times 10^8 \text{ m}$  per second, find how long does light take from that star to reach the Earth.
- a)  $27 \times 10^8 \text{ s}$                       b)  $2.7 \times 10^{21} \text{ s}$                       c)  $2.7 \times 10^8 \text{ s}$                       d)  $2.7 \times 10^5 \text{ s}$
- Q19. If  $a + b = 12$ , and  $ab = 14$ , find the value of  $a^2 + b^2$ .
- a) 116                      b) 144                      c) 28                      d) 172

Q20. In the given right-angled triangle ABC,  $\angle B = 90^\circ$ . Find the value of x.



- a) 4 cm                      b) 5 cm                      c) 12 cm                      d) 6 cm

Q21. Area of unshaded portion in the figure given below is



- a) 10 sq cm                      b) 20 sq cm                      c) 15 sq cm                      d) 5 sq cm

Q22. The product of the 7 fractions:

$$\left(1 - \frac{1}{2}\right) \left(1 - \frac{1}{3}\right) \left(1 - \frac{1}{4}\right) \left(1 - \frac{1}{5}\right) \left(1 - \frac{1}{6}\right) \left(1 - \frac{1}{7}\right) \left(1 - \frac{1}{8}\right) = \text{---}$$

- a)  $\frac{1}{2}$                       b)  $\frac{1}{6}$                       c)  $\frac{1}{4}$                       d)  $\frac{1}{8}$

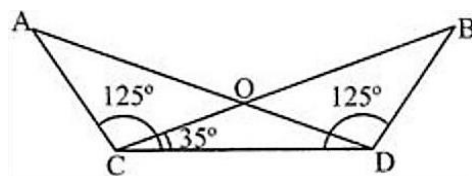
Q23. A's income is 60% more than that of B. By what percent is B's income less than A's?

- a) 42.5%                      b) 40%                      c) 37.5%                      d) 47.5%

Q24. The mean of 5 observations is 7. If mean of the first three observations is 5 and that of the last three is 9, then the third observation is:

- a) 5                      b) 7                      c) 9                      d) 11

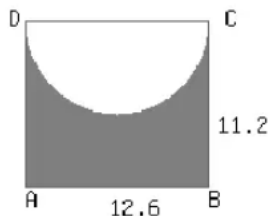
Q25. In the fig,  $AC = BD$ , what is the measure of  $\angle CAD$ ?



- a)  $25^\circ$                       b)  $35^\circ$                       c)  $60^\circ$                       d)  $20^\circ$

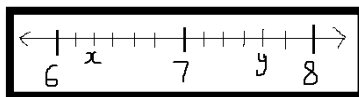
- Q26. The difference between the circumference and radius of a circle is 74 m. What is the circumference of the circle? (use  $\pi = \frac{22}{7}$ )
- a) 56 m                      b) 74 m                      c) 110m                      d) 88 m

- Q27. In the given figure, ABCD is rectangle. Find the area of the shaded region. (Assume  $\pi = \frac{22}{7}$ )



- a) 74.75 m<sup>2</sup>                      b) 76.75 m<sup>2</sup>                      c) 78.75 m<sup>2</sup>                      d) 81.75 m<sup>2</sup>

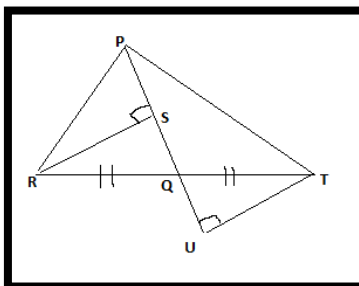
- Q28. Given figure is a number line



What is the value of  $y - x$ ?

- a)  $1\frac{2}{3}$                       b)  $1\frac{1}{3}$                       c)  $\frac{1}{3}$                       d)  $\frac{2}{3}$

- Q29. In the given figure, PQ is a median and RS and TU are perpendiculars drawn from R and T respectively on PQ produced to point U. If QS = 3.5 cm, then SU is equal to



- a) 4.5cm                      b) 5.5cm                      c) 7cm                      d) 3.5cm

- Q30. If  $2^x = 500$ , then the value of  $2^{x-4}$  is

- a)  $\frac{1000}{2}$                       b)  $\frac{500}{16}$                       c)  $\frac{1000}{16}$                       d)  $\frac{500}{2}$

**SECTION D**  
**SCIENCE**

- Q1. A 10°C fall in temperature is equal to
- a) 10°F fall in temperature                      b) 18°F fall in temperature  
c) 10°F rise in temperature                      d) 18°F rise in temperature
- Q2. Read the given statements and select the correct option.  
Statement 1: In a pressure kerosene stove, both physical and chemical changes take place.  
Statement 2: In a pressure kerosene stove, first we pump kerosene to convert it into vapours and then vapours are ignited.
- a) Both statements 1 and 2 are true and statement 2 is the correct explanation of statement 1.  
b) Both statements 1 and 2 are true but statement 2 is not the correct explanation of statement 1.  
c) Statement 1 is true and statement 2 is false.  
d) Both statements 1 and 2 are false.
- Q3. A car moves with a speed of 40 km/h for 15 minutes, and then with a speed of 60 km/h for the next 15 minutes. The total distance covered by the car is
- a) 100 km                      b) 25 km                      c) 15 km                      d) 10 km
- Q4. The necessary requirement for a fuse wire is
- a) conductor with low melting point                      b) conductor with high melting point  
c) insulator with low melting point                      d) insulator with high melting point
- Q5. When a light ray is reflected repeatedly by a set of parallel plane mirrors, the intensity of the light ray decreases after some reflections. This is because of
- a) Poor reflection from mirrors  
b) Absorption of some amount of light by mirrors  
c) Dispersion of light when the rays travel through the atmosphere  
d) Scattering of light by the mirrors.
- Q6. Tests show that the urine of a patient contains sugar. What disease is the patient suffering from?
- a) Blood pressure                      b) Diabetes                      c) Typhoid                      d) Cholera
- Q7. Consider the following statements. Select the option which correctly identifies true (T) and false (F) ones.
- (i) The valve between left and right atrium allows the blood to flow only in one direction.  
(ii) The contents of phloem can move only in the upward direction whereas water in xylem moves both in the upward and downward directions.  
(iii) Capillaries are the smallest blood vessels  
(iv) White blood cells are capable of amoeboid movement.
- |    | (i) | (ii) | (iii) | (iv) |
|----|-----|------|-------|------|
| a) | F   | F    | T     | T    |
| b) | T   | F    | T     | T    |
| c) | F   | T    | T     | T    |
| d) | F   | F    | T     | F    |



- Q8. Prashant observed flowers of two different plants X and Y. Flowers of X are large, coloured, showy and produce nectar while flowers of Y are small, dull without nectar. Pollen grains of X are sticky and bigger while pollen grains of Y are small in size and dry.  
Which of the following is correct regarding X and Y?
- X could be pollinated by insect whereas Y could be pollinated by wind.
  - X could be pollinated by wind whereas Y could be pollinated by water.
  - X could be pollinated by wind whereas Y could be pollinated by insect.
  - X could be pollinated by water whereas Y could be pollinated by insect.
- Q9. The most appropriate unit for expressing the speed of a space rocket is
- m/s
  - km/s
  - km/h
  - km/min
- Q10. Which of the following statement is incorrect?
- When a candle burns both physical and chemical change take place
  - Anaerobic bacteria digest animal waste and produce biogas
  - Ships suffer a lot of damage though they are not painted
  - Stretching of rubber band is not a physical change
- Q11. Sometimes when we do heavy exercise, anaerobic respiration take place in our muscles cells. What is produced during this process?
- Alcohol and lactic acid
  - Alcohol and  $\text{CO}_2$
  - Lactic acid and  $\text{CO}_2$
  - Lactic acid only
- Q12. Circuit Breaker Device which can be used in place of fuse in domestic electric wiring is called:
- CBD
  - DCB
  - MCD
  - MCB
- Q13. The best soil for growing paddy is the one which has:
- Low percolation rate of water
  - High percolation rate of water
  - Moderate percolation rate of water
  - Zero percolation rate of water
- Q14. Which of the following do not require electric current?
- coating of chromium
  - coating of aluminium
  - coating of zinc
  - coating of gold
- Q15. Diagram below shows a potted plant and the same plant 24 hours later.



What has caused the plant's appearance to change?  
Which process causes this change?

- a) Water loss by translocation is greater than water uptake
- b) Water evaporating from the leaves by translocation
- c) Water loss by transpiration is greater than water uptake
- d) Water loss from the leaves by osmosis

Q16. Blood vessel A carries deoxygenated blood from the heart to the lungs and blood vessel B carries oxygenated blood from the lungs to the heart. Identify A and B.

- a) A-Pulmonary vein, B-pulmonary artery
- b) A-superior venacava, B-Aorta
- c) A-Pulmonary artery, B-Pulmonary vein
- d) A- Aorta, B-Superior venacava

Q17. Read the following statements and choose the correct answer from the given options.

- i) relationship which is beneficial to one and harmful to the other
- ii) relationship which is beneficial to both organisms
- iii) relationship which benefits one organism without affecting the other
- iv) relationship where one organism derives its nutrition from another organism.

- a) i-mushroom, ii-lichens, iii-cuscuta, iv-sundew
- b) i-sundew, ii-lichens, iii-mushroom, iv-cuscuta
- c) i-cuscuta, ii-lichens, iii-mushroom, iv-sundew
- d) i-mushroom, ii-lichen, iii-cuscuta, iv-sundew

Q18. A student burnt a metal ribbon in air and the ash collected was later dissolved in water. The colour change that will occur when it is exposed to phenolphthalein will be

- a) no specific change
- b) colourless
- c) pink
- d) green

Q19. Which of the following has a magnitude and a direction?

- a) speed
- b) distance
- c) time
- d) displacement

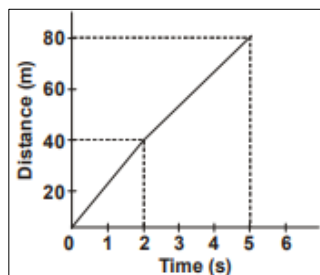
Q20. When the object is placed at the centre of curvature C of a concave mirror, the image formed will be at

- a) Focus
- b) Centre of curvature
- c) Between C and F
- d) Infinity

Q21. Which is the major gas present in the exhaled air?

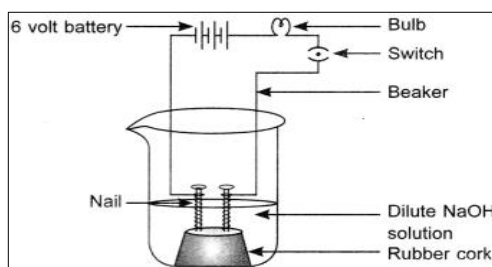
- a) oxygen
- b) carbon dioxide
- c) nitrogen
- d) helium

Q22. The distance -time graph of a truck is shown. What was the average speed of the truck over the distance shown?



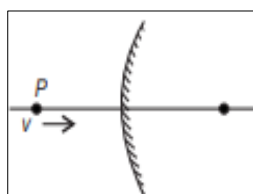
- a) 16 m/s
- b) 16.67 m/s
- c) 33.33 m/s
- d) 220 m/s

- Q23. The apparatus given in the adjoining figure was set up to demonstrate electrical conductivity. Which of the following statement(s) is (are) correct?



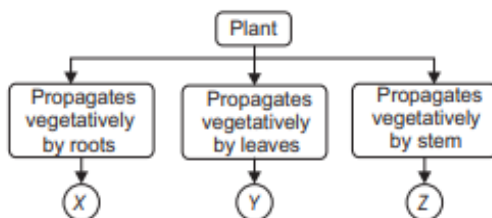
- (i) Bulb will not glow because electrolyte is not acidic.  
 (ii) Bulb will glow because HCl is a strong acid and furnishes ions for conduction.  
 (iii) Bulb will not glow because circuit is incomplete.  
 (iv) Bulb will not glow because it depends upon the type of electrolytic solution.
- (a) (i) and (iii)      (b) (ii) and (iv)      (c) (ii) only      (d) (iv) only

- Q24. A point object P moves towards a convex mirror with a constant speed  $v$ , along its optic axis. The speed of the image.



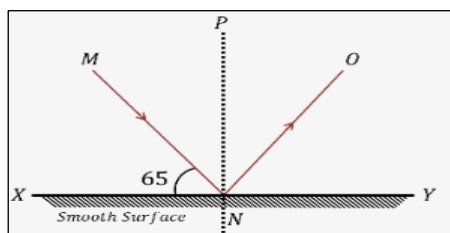
- a) Is always less than  $v$       b) Is always more than  $v$   
 c) Is equal to  $v$       d) Decreases as P comes closer to the mirror

- Q25. Study the given flow chart and select the option that correctly identifies X, Y and Z.



- |     | <b>X</b>    | <b>Y</b>      | <b>Z</b>  |
|-----|-------------|---------------|-----------|
| (A) | Bryophyllum | Bougainvillea | Carrot    |
| (B) | Dahlia      | Begonia       | Potato    |
| (C) | Begonia     | Ginger        | Asparagus |
| (D) | Bryophyllum | Strawberry    | Dahlia    |

- Q26. Observe the given figure and answer the question:  
 Identify PN and calculate the angle made by PN to smooth surface.

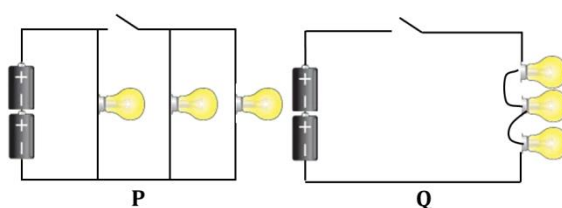


- a) Incident ray,  $65^\circ$       b) Reflected ray,  $35^\circ$       c) Normal,  $90^\circ$       d) Incident ray,  $50^\circ$

- Q27. The table shows the area of a pond in percentage covered by green algae within 20 days. A student claimed that algae reproduces sexually and grows rapidly in the pond. Is the claim made by the student correct?

Day	Covered area of the pond with algae%
1	5
12	30
20	80

- a) Yes; Algae reproduce sexually by means of spores.  
 b) Yes; Algae reproduce sexually by means of gametes.  
 c) No; Algae reproduce asexually by means of budding.  
 d) No; Algae reproduce asexually by means of fragmentation.
- Q28. A student wishes to check the upper and the lower fixed points on a Celsius scale thermometer. She has four beakers P, Q, R and S.  
 Beaker P contains a mixture of ice and salt.  
 Beaker Q contains a mixture of ice and water.  
 Beaker R contains boiling salt solution.  
 Beaker S contains boiling water.  
 Which two beakers should she use to check the fixed points?
- a) P and R                      b) P and S                      c) Q and R                      d) Q and S
- Q29. Which statement describes what happens as ice at  $0^{\circ}\text{C}$  starts to melt to become water?
- a) Energy is absorbed and the temperature remains constant.  
 b) Energy is absorbed and the temperature rises.  
 c) Energy is released and the temperature remains constant.  
 d) Energy is released and the temperature rises
- Q30. The two electrical circuits shown here consist of similar type of dry cells and batteries. Which of the following statement is correct for the given circuits?



- a) If the middle bulb in circuit Q blows, at least one bulb will still be able to light up.  
 b) The bulbs in circuit Q are brighter than those in circuit P when all the switches are closed.  
 c) One bulb in circuit P will light up when the switch is open.  
 d) All the bulbs in circuit P will not light up when the switch is open.



