BOTHRA ENTRANCE AND SCHOLARSHIP TEST

Class VII Studying Moving to Class VIII

Physics, Chemistry Mathematics & Biology

INSTRUCTIONS FOR CANDIDATE

1. The Answer Sheet is provided to you separately which is a machine readable Optical Mark Recognition (OMR). You have to mark your answers in the **OMR** by darkening bubble, as per your answer choice, by using black & blue ball point pen.

2. Total Questions to be Attempted 40. (Mathematics-20), (Physics-8), (Chemistry-6), (Biology-6).

3. Marking Scheme:
   a. If darkened bubble is RIGHT answer: 4 Marks.
   b. If no bubble is darkened in any question: No Mark.
   c. If darkened bubble is WRONG answer: –1 Mark (Minus One Mark).

4. Think wisely before darkening bubble as there is negative marking for wrong answer.

5. If you are found involved in cheating or disturbing others then your OMR will be cancelled.

6. Do not put any stain on **OMR** and hand it over back properly to the invigilator.

MATHEMATICS
(Single correct option +4, -1)

1. An elevator descends into a mine shaft at the rate of 6 m/min. If the descent starts from 10 m above the ground level, how long will it take to reach -350 m?

   (a) 10 min   (b) 20 min   (c) 1 hour   (d) 45 min

2. Which has the greatest quotient

   (a) $(-20) \div (-5)$ (b) $(-20) \div 5$ (c) $20 \div (-4)$ (d) $20 \div 4$

3. Which of the following is a true statement ?

   (a) $-11 > -8$ (b) $-11 < -8$

   (c) -11 and -8 cannot be compared   (d) None of these

4. Find the values of $\dfrac{0.34 - 0.034}{0.0034 \div 34}$.

   (a) 0.306   (b) 306   (c) 3060   (d) 0.0306

5. The fraction representing the shaded part of the given square is:
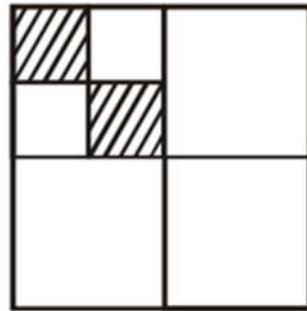
   (a) $\dfrac{2}{7}$ (b) $\dfrac{2}{4}$ (c) $\dfrac{2}{8}$ (d) $\dfrac{1}{8}$

6. If all the fractions $\dfrac{3}{5}, \dfrac{1}{8}, \dfrac{8}{11}, \dfrac{4}{9}, \dfrac{2}{7}, \dfrac{5}{7}$ and $\dfrac{5}{12}$ are arranged in descending order of their values, which one will be the third?

   (a) $\dfrac{1}{8}$ (b) $\dfrac{3}{5}$ (c) $\dfrac{5}{12}$ (d) $\dfrac{8}{11}$

7. 5 cm is equal to :

    (a) 0.005 km   (b) 0.00005 km   (c) 0.000005 km   (d) None of these

8. If $2(p-5) = \dfrac{p}{2} + 5,$ then p = _____.

    (a) 8   (b) 9   (c) 10   (d) 11

9. If $\dfrac{z+5}{7} + \dfrac{4(z-11)}{9} + 3 = 0$, then $z =$ _____.

    (a) 1   (b) 2   (c) - 4   (d) 5

10. On adding 9 to the twice of a whole number gives 31. The whole number is

    (a) 21   (b) 16   (c) 17   (d) 11

11. In the given figure, $AB \parallel CD \parallel FG$, $\angle ABE = 120°, \angle ECD = 100°$ and $\angle BEC = x°$, Find the value of x.
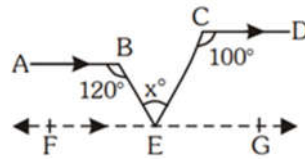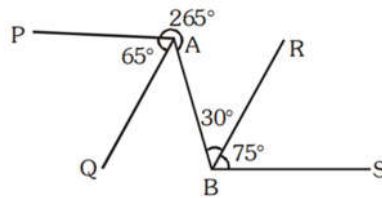

    (a) 40°   (b) 60°   (c) 100°   (d) 120°

12. In the given figure, rays OA, OB, OC and OD are such that $\angle AOB = 56°$, $\angle BOC = 100°$, $\angle COD = x°$ and $\angle DOA = 74°$. Find the value of x.
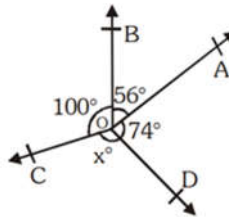

    (a) 120°   (b) 110°   (c) 130°   (d) 140°

13. In the given figure, which lines are parallel.

(a) AP,BS   (b) AQ,RB   (c) AP,RB   (d) cannot be determined

14. What percent of 1 day is 36 minutes?

(a) 25%   (b) 2.5 %   (c) 3.6%   (d) 0.25%

15. On reducing the value of an object by 6%, it becomes ₹ 376. The original value of object is

(a) ₹ 375   (b) ₹400   (c) ₹ 350   (d) ₹ 250

16. What is the value of $\dfrac{P+Q}{P-Q}$, if $\dfrac{P}{Q} = 7$.

(a) 4 : 3   (b) 3 : 4   (c) 7: 1   (d) 1 : 7

17. A sum of ₹1600 Given a simple interest of ₹ 252 in 2 years and 4 months. The rate if interest per annum is:

(a) 6%   (b) $6\dfrac{1}{4}\%$ (c) $6\dfrac{1}{2}\%$ (d) $6\dfrac{3}{4}\%$

18. Which of the following shapes dies not have a rotational symmetry ?

(a)   (b)   (c)   (d)
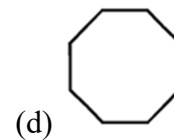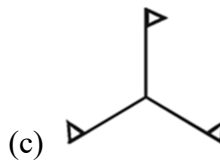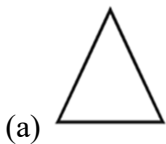
19. The order of rotational symmetry for the given flower is:
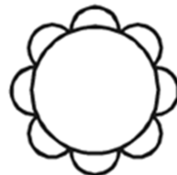
(a) 4   (b) 6   (c) 8   (d) 2

20. How many lines of symmetry are there in the following figure ?
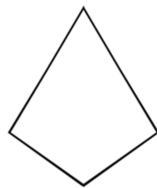
    (a) 1   (b) 2   (c) 3   (d) Infinitely many

PHYSICS
(Single correct option +4, -1)

1. The speed of the tip of a second hand of length 5 cm of a clock is _____ ms^{-1} .
   (a) 1   (b) 60   (c) 5.3×10^{-3} (d) 3.4×10^{-5}

2. Choose the correct statement:
   (a) The magnitudes of speed and velocity are same when a body travels in a straight line path.
   (b) Average speed of a moving body can be equal to zero, but its average velocity cannot be equal to zero.
   (c) To describe the velocity. Direction is necessary.
   (d) Both (a) and (c)

3. A vehicle travels along a straight path between two places α and β. It travels first half of the distance with a velocity of 72 km h^{-1} and the remaining distance with a velocity of 36 km h^{-1}. Then the average velocity of the vehicle is _____ $m\,s^{-1}$.

   (a) $11.\bar{3}$ (b) $13.\bar{3}$ (c) 15   (d) 14

4. Normal temperature of the human body is _____ .
   (a) 87 K   (b) 273 K   (c) $37^o C$ (d) $82^o F$

5. On heating a substance which of the following physical quantities changes?
   (a) Density   (b) Mass   (c) Volume   (d) Both (a) and (c)

6. Heat flow from one body to another body stops when both bodies attain equal_____.
   (a) temperature   (b) heat energy   (c) mass   (d) volume

7. Sea breeze and land breeze are formed due to _____ .
   (a) conduction   (b) convection   (c) radiation   (d) All the above
8. The distance-time graph of an object is a straight line parallel to the time axis, then the object is

   _____ .
   (a) at rest   (b) in uniform motion
   (c) moving with a uniform speed   (d) moving with a non-uniform speed

CHEMISTRY
(Single correct option +4, -1)
1. Which of the following describes the process of depositing a zinc layer on iron?
   (a) Galvanisation   (b) Crystallisation   (c) Rusting   (d) None of the above
2. Which of the following is not a chemical change characteristic?
   (a) Change in colour   (b) Change in state
   (c) Production of sound   (d) Change in smell
3. What kind of change occurs when the tip of the blade is placed on a gas stove?
   (a) Chemical change   (b) Physical change   (c) No change   (d) Irreversible change
4. When magnesium is burned in the air, it produces powdery ash that, when dissolved in water, yields
   an aqueous solution. How will you categorise the aqueous solution?
   (a) Acidic   (b) Neutral   (c) Basic   (d) Can't be predicted
5. When food spoils, it emits a foul odour as a result of a chemical change. What is the name given to
   this process?
   (a) Rusting   (b) Rancidity   (c) Crystallisation   (d) Corrosion
6. Which of the following chemical is responsible for making lime water milky?
   (a) Calcium carbonate   (b) Calcium hydroxide
   (c) Calcium chloride   (d) Calcium oxide

BIOLOGY
(Single correct option +4, -1)
1) A parasitic plant with yellow, slender and branched stem.
   (a) Cuscuta (Amarbel)   (b) pitcher plant
   (c) mustard plant   (d) china rose
2) The plant which traps and feeds on insects is:
   (a) Cuscuta   (b) china rose   (c) pitcher plant   (d) rose
3) Fat is completely digested in the

(a) stomach   (b) food pipe   (c) small intestine   (d) large intestine

4) The carbohydrates get broken into simple sugars such as glucose, fats into fatty acids and glycerol, and proteins into amino acids by the action of :-

(a) pancreatic juice   (b) intestinal juice   (c) gastric juice   (d) bile juice

5) During heavy exercise, we get cramps in the legs due to the accumulation of

(a) Carbon dioxide   (b) lactic acid   (c) alcohol   (d) water

6) The different treetops had formed green cover over the land:-

(1) The cover was not uniformly green

(2) The environment was peaceful and a cool breeze was blowing

(3) This made children quite fresh and happy.

Find the correct option for the above information:-

(a) Only (1) is correct   (b) only (1) and (3) are correct

(c) all are correct   (d) none of these