

MOTION TALENT SEARCH EXAMINATION

SESSION - 2024-25

CLASS : 8th

QUESTION PAPER

CANDIDATE'S NAME : _____

DURATION: 60 MINUTES

TOTAL QUESTIONS: 31

MAXIMUM MARKS : 124

1. The paper consists of five sections :- Physics, Chemistry, Biology, Mathematics and Mental Ability.
2. All questions are compulsory and carry four marks each. One mark will be deducted for each wrong answer.

3. There is only one correct answer hence mark one choice only.
4. Darken your choice in OMR Sheet with Blue/ Black Ball Point Pen.
5. Return the OMR Sheet to the invigilator at the end of the exam.

PHYSICS

Comprehension/Passage (Q.1 to 3):

It is a form of energy which causes the sensation of hotness or coldness.

For example, if we dip our finger in hot water we have a sensation of hotness. Similarly, If we touch a block of ice the sensation is that of coldness. In the former case the heat energy has moved into the finger while in the later case it has moved out of the finger. Thus hotness or coldness basically indicates whether heat energy is flowing into our body or out of it.

It is the effect of heat energy which determines the thermal state of a given substance. In other words it determines the degree of hotness or coldness of a substance. If a body is at a higher temperature than its surroundings, it means that heat energy will flow out of the body. Similarly, if a body is at a lower temperature than its surroundings, it means that heat energy will flow into the body.

1. The physical property which tells about the degree of hotness or coldness of a body.
(A) Temperature (B) Conduction
(C) Convection (D) None of these
2. Heat causes
(A) increase in temperature
(B) Change in state
(C) Expansion
(D) All of these

3. An iron ball at 40°C is dropped in a mug containing water at 40°C. The heat will
(A) flow from iron ball to water.
(B) not flow from iron ball to water or from water to iron ball.
(C) flow from water to iron ball.
(D) increase the temperature of both.

Comprehension/Passage (Q.4 to 6):

Speed of a body is the distance travelled by the body in one second

$$\text{speed} = \frac{\text{Distance travelled}}{\text{Time taken}}$$

Distance travelled is measured in metre and time in second.

Therefore, the S.I. unit of speed is metre/second. [(m/s)].

It can also be expressed in kilometer/hour [km/h]

If we know the speed of an object we can find out the distance covered by it in a given time. Distance covered = speed × time.

The speed of a bus during a journey may vary. When the bus is near to a bus stop, its speed decreases. On the highways the bus travels with greater speed but in a city or town it travels with less speed due to heavy traffic.

The bus has different speeds at different times. So we say that it has **variable speed**.

4. The SI unit of Speed is
(A) m/s (B) km / min
(C) km / hr (D) m / min
5. A particle is travelling with a constant speed. This means-
(A) Its position remains constant as time passes
(B) It covers equal distance in equal interval of time
(C) Its acceleration is non zero
(D) It does not change its direction of motion
6. A body is moving with uniform velocity of 10 ms^{-1} . The velocity of the body after 10 s is-
(A) 100 ms^{-1} (B) 50 ms^{-1}
(C) 10 ms^{-1} (D) 5 ms^{-1}

CHEMISTRY

Comprehension/Passage (Q.7 to 9):

The process in which an acid completely reacts with a base to form salt and water is called neutralisation reaction. Neutralisation reaction is highly exothermic in nature. The salts which are formed may be acidic, basic or neutral. The substances which do not bring any change in the colour of the indicators are called neutral substances.

7. When sodium hydroxide is added to dilute hydrochloric acid:
(A) sodium chloride salt is formed
(B) sodium chloride salt and water are formed
(C) sodium chloride salt and water are formed and heat is evolved
(D) sodium chloride salt and water are formed and heat is absorbed
8. When few drops of phenolphthalein are added to a solution of common salt
(A) the solution becomes pink in colour
(B) the solution remains colourless
(C) the solution turns orange in colour
(D) the solution turns green in colour
9. Sodium chloride solution is neutral in nature because:
(A) it is formed by complete neutralisation of a strong acid and a strong base
(B) it is formed by the complete neutralisation of a weak acid and a weak base
(C) it is formed by the incomplete neutralisation of a strong acid and a strong base
(D) it is formed by the incomplete neutralisation of a weak acid and a weak base

Comprehension/Passage (Q.10 to 12):

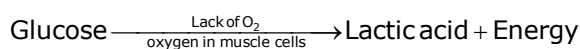
A change in which a new substance is formed with different properties is called a chemical change. In a chemical change heat is either evolved or absorbed most of the times. The original substances cannot be recovered easily. The change may be accompanied by evolution of light and sound also. Chemical reactions are examples of chemical change. When a matchstick is burnt, it changes forever and it cannot be lighted again. Hence, we say that matchstick has undergone a chemical change.

10. Which of the following is not a chemical change?
(A) Cooking of rice and dal
(B) Burning of coal to give ash
(C) Cutting of wood into very small pieces
(D) Burning of small pieces of wood
11. Which of the following statements is not true?
(A) Adding sugar in milk is a physical change
(B) Ice and steam are two different substances
(C) Rusting of iron is a chemical reaction
(D) Chemical changes are generally irreversible
12. Which of the following is involved in a chemical change?
(A) Change in colour
(B) Evolution of a gas
(C) Absorption or release of heat
(D) All of the above

BIOLOGY

Comprehension/Passage (Q.13 to 15):

Anaerobic respiration also occurs in skeletal muscles of humans for only a short time, where it produces lactic acid. During vigorous muscular activities, like fast running, brisk walking or heavy exercise, more energy is needed. Therefore, demand for oxygen also increases, but oxygen supply to muscles remains unchanged. Due to this temporary deficiency of oxygen, skeletal muscles respire anaerobically and glucose partially breaks down into lactic acid releasing energy. Accumulation of lactic acid leads to muscle fatigue.



This process of anaerobic respiration which yields either ethyl alcohol and carbon dioxide (in yeasts) or lactic acid (in skeletal muscles of mammals) is also called fermentation.

- 13.** In muscle cells, the end product of anaerobic respiration is:
 (A) carbon dioxide (B) lactic acid
 (C) ethanol (D) water
- 14.** In human beings, muscle cramps occur after heavy exercise. This is because:
 (A) partial breakdown of glucose produces lactic acid
 (B) complete breakdown of glucose produces lactic acid
 (C) muscle cells respire in the presence of oxygen
 (D) supply of oxygen to muscle cells increases
- 15.** Which of the following statements is correct for anaerobic respiration?
 (A) Food is broken down in the absence of oxygen to release energy
 (B) Breakdown of food occurs in presence of oxygen
 (C) It is slow process compared to aerobic respiration
 (D) It produces large amount of energy compared to aerobic respiration

Comprehension/Passage (Q.16 to 18):

Digestive glands such as salivary glands (in mouth), gastric glands (in stomach), liver and pancreas secrete digestive juices to convert complex substances of food into simpler ones. The inner wall of small intestine also secretes digestive juices. The digestive tract and the associated glands together constitute the digestive system. The food components gradually get digested as food travels through the various compartments of alimentary canal.

- 16.** Which part of the alimentary canal secretes acid?
 (A) Small intestine (B) Large intestine
 (C) Mouth (D) Stomach
- 17.** Which secretion does not contain digestive enzymes?
 (A) Bile juice (B) Gastric juice
 (C) Intestinal juice (D) Pancreatic juice
- 18.** Which of the following statements is incorrect?
 (A) Saliva lubricates the food
 (B) Tongue helps in tasting food
 (C) Bile breaks down fat into small droplets
 (D) Saliva helps to digest proteins

MATHEMATICS

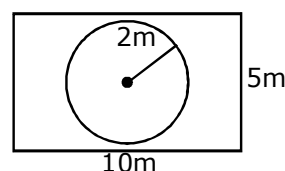
Comprehension/Passage (Q.19 to 21):

In a class test containing 10 questions, 5 marks are awarded for every correct answer and (-2) marks are awarded for every incorrect answer and 0 for questions not attempted.

- 19.** Mohan gets four correct and six incorrect answers. What is his score?
 (A) 6 (B) 7
 (C) 8 (D) 9
- 20.** Reshma gets five correct answers and five incorrect answers, what is her score?
 (A) 13 (B) 15
 (C) 17 (D) 18
- 21.** Heena gets two correct and five incorrect answers out of seven questions she attempts. What is her score?
 (A) 0 (B) 1
 (C) 2 (D) 3

Comprehension/Passage (Q.22 to 24):

The adjoining figures represents a rectangular lawn with a circular flower bed in the middle.



- 22.** Find the area of the whole land.
 (A) 30 m^2 (B) 40 m^2
 (C) 45 m^2 (D) 50 m^2
- 23.** Find the area of the lawn excluding the area of the flower bed.
 (A) 36.44 m^2 (B) 37.44 m^2
 (C) 36.22 m^2 (D) 37.20 m^2
- 24.** Find the circumference of the flower bed.
 (A) 12.56 m (B) 11.56 m
 (C) 12.12 m (D) 11.10 m

MENTAL ABILITY

Comprehension/Passage (Q.25 to 27):

Five girls are sitting on a bench to be photographed. Seema is to the left of Rani and to the right of Bindu. Mary is to the right of Rani, Reeta is between Rani and Mary.

25. Who is sitting immediate right to Reeta?
 (A) Bindu (B) Rani
 (C) Mary (D) Seema
26. Who is in the middle of the photograph?
 (A) Bindu (B) Rani
 (C) Reeta (D) Seema
27. Who is second from the right?
 (A) Mary (B) Rani
 (C) Reeta (D) Bindu

Comprehension/Passage (Q.28 to 31) :

Geeta is older than Lata. Ajay is older than Lata but younger than Geeta. Asif is younger than Rakesh and Lata. Lata is older than Rakesh.

28. Whose age is between Ajay and Rakesh ?
 (A) Lata (B) Asif
 (C) Geeta (D) None of these
29. Whose age is between Lata and Asif ?
 (A) Ajay (B) Rakesh
 (C) Geeta (D) None of these
30. Whose age is exactly in the middle of all the five ?
 (A) Lata (B) Ajay
 (C) Rakesh (D) Geeta
31. Who is the eldest ?
 (A) Geeta (B) Lata
 (C) Asif (D) Ajay