MOTION TALENT SEARCH EXAMINATION
SESSION - 2024-25

CLASS : 9th

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 dedcuted 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):

The bulb gives out an invisible energy called light. When this energy falls on the objects in the room, it bounces off from the surface of objects. When this energy enters our eyes, the eyes sense it and send a message to the brain. It is finally, the brain which really sees the objects. Eyes are only an aid in seeing the objects around us.

Why do we say that light is invisible ? Well, when light energy falls on the objects, we really do not see it. When energy bounces off from the surface of objects and enters our eyes, the sensation produced by this energy, helps our brain to see. Thus, to sum up we can say :

Light is an invisible energy, which causes in us the sensation of vision. When the light falls on any object, it bounces off from the surface of the object in all directions. This is called scattering of light.

Light is form of energy which enables us to see objects which emit or reflect light.

Light is a type of (form of) energy which can produce sensation in our eyes. So we can experience the sensation of vision.

It travels in straight line in form of particles and waves. With the help of light we see all colours of nature.

Our eyes are mostly sensitive for yellow colour and least sensitive for violet and red colour. Due to this reason commercial vehicles are painted with yellow colour, sodium lamps are used in road lights.-

1. Why can we see object –
(A) Light reflected by object enters in our eye
(B) Eyes sense the light energy
(C) Brain interprets the message sent by eyes
(D) All of above

2. Light travels in the path of –
(A) Curved line (B) Zig-zag line
(C) Straight line (D) all of above

3. Find out the incorrect statement –
(A) Light produces sensation in our eyes
(B) Light travels inform of particle and wave.
(C) Our eyes are most sensitive to yellow colour
(D) Sodium lamp gives visible form of light.

Comprehension/Passage (Q.4 to 6):

Fluids exert pressure on all bodies immersed in them and on the walls of the container that holds them. Pressure exerted by the liquid is the same in all directions about a point.

Pressure exerted is the same at all points in a horizontal plane as well as in a stationary liquid. Pressure at a point inside a liquid increases with depth from the free surface.

Pressure at a particular depth is different for different liquids, i.e. P = hdg
where, h = height of the column of liquid.
d = density of the liquid
g = acceleration due to gravity
The pressure exerted anywhere in a confined liquid is transmitted equally and undiminished in all directions throughout the liquid which is called 'Pascal's law'.

4. Pressure exerted by liquids is proportional to
(A) density of liquid
(B) height of liquid
(C) gravitational acceleration
(D) None of above

5. Pressure exerted by finger tip on balloon:–
(A) Creates more pressure at the point where it is poked
(B) Creates less pressure at other side of balloon
(C) Transfers the pressure equally in all directions
(D) all of above

6. Pressure exerted by one litre of water at the bottom of bisleri bottle is –
(A) more at moon than earth
(B) less at moon than earth
(C) equal on both earth and moon
(D) less at earth but more on moon

CHEMISTRY

Comprehension/Passage (Q.7 to 9):
Metals and non-metals react with oxygen to give oxides at different rates. The oxides formed by metals are basic in nature while oxides formed by non-metals are acidic in nature. The nature of oxides can be determined by testing the aqueous solution of oxides with litmus paper.

7. The oxides of non-metals are acidic oxides beause they dissolve in water to give .....
(A) alkalies (B) acids
(C) carbonates (D) sulphates

8. Phosphorus is burnt in air to give phosphorus pentoxide. It is dissolved in water and tested with litmus paper. Mark the correct observation.
(A) Red litmus paper turns blue
(B) Blue litmus paper turns red
(C) There is no change in the litmus paper
(D) Red litmus paper changes to green

9. Magnesium ribbon on burning in air gives a white powder which when dissolved in water turns red litmus to blue. The reason for this change is that:
(A) MgO is a basic oxide
(B) MgO is an acidic oxide
(C) MgO is a very reactive oxide
(D) MgO is not a reactive oxide

Comprehension/Passage (Q.10 to 12):
The combustible substance burnt for releasing (and using) its heat energy is known as 'fuel'. Although it is true that when a combustible substance is burnt, it produces both light and heat, yet when heat energy that is produced by it is used, it is called fuel. Usually, fuels are compounds of carbon and hydrogen, thus they combine with oxygen on burning and liberate carbon dioxide and water vapour. Substances such as wood, coal, kerosene, diesel, petrol, LPG, etc., are commonly used as fuels. Fuels may be used at home, in industries and for transportation.

10. A fuel can exist in the following states:
(A) solid only (B) liquid only
(C) solid and liquid (D) solid, liquid and gas

11. Which of the following fuels is used for running automobiles?
(A) Wood (B) Charcoal
(C) Diesel (D) Coal

12. Any substance may be regarded as a fuel which liberates carbon dioxide, water vapours and heat energy on reaction with:
(A) oxygen (B) water
(C) carbon monoxide (D) hydrogen

BIOLOGY

Comprehension/Passage (Q.13 to 15):
Adolescents become capable of reproduction when their testes and ovaries begin to produce gametes. The capacity for maturation and production of gametes lasts for a much longer time in males than in females.
In females, the reproductive phase of life begins at puberty (10 to 12 years of age) and generally lasts till the age of approximately 45 to 50 years.
Menstruation occurs once in about 28 to 30 days. The first menstrual flow begins at puberty and is termed **menarche**.

At 45 to 50 years of age, the menstrual cycle stops. Stoppage of menstruation is termed as **menopause**. Menstrual cycle is controlled by hormones. The cycle includes the maturation of the egg, its release, thickening of uterine wall and its breakdown if pregnancy does not occur. In case the egg is fertilised it begins to divide and then gets embedded in the uterus for further development.

13. The stage when the reproductive organs reach sexual maturity is called :-
(A) puberty (B) menstruation
(C) gestation (D) fertilization

14. Reproductive age in women starts when their:-
(A) Menstruation starts
(B) Body weight decreases
(C) Body weight increases
(D) Height increases

15. Adolescents should be careful about what they eat, because :-
(A) Proper diet develops their brain
(B) Proper diet is needed for the rapid growth taking place in their body
(C) Adolescents feel hungry all the time
(D) Taste buds are well developed in teenagers

Comprehension/Passage (Q.16 to 18):

Reproduction is a process by which living organisms produce new individuals of their own kind and maintain their existence generation after generation. Reproduction is not essential to maintain the life of an organism but it is essential to maintain life on Earth and perpetuation of species from one generation to another.

Reproduction at its basic level (cellular reproduction) is involved in making similar or dissimilar body designs through the genetic material (DNA) present in the chromosomes of its nucleus.

DNA is the source of information for making proteins. Any change in the information leads to production of different proteins, which ultimately lead to altered body designs.

16. Which one of the following is concerned with asexual reproduction ?
(A) Zygote (B) Spores
(C) Gametes (D) Gonads

17. Egg laying animals are known as :-
(A) Viviparous (B) Oviparous
(C) Sterile (D) Hermaphrodite

18. In humans, fertilization of ovum takes place in :-
(A) Ovary (B) Fallopian tube
(C) Cervix (D) Uterus

MATHEMATICS

Comprehension/Passage (Q.19 to 21):

The final marks in Mathematics of 30 students are as follows :

53, 61, 48, 60, 78, 68, 55, 100, 67, 90, 75, 88, 77, 37, 84, 58, 60, 48, 62, 56, 44, 58, 52, 64, 98, 59, 70, 39, 50, 60.

19. What is the range?
(A) 63 (B) 61
(C) 53 (D) None of these

20. How many students have scored less than 50?
(A) 5 (B) 6
(C) 4 (D) None of these

21. If 40 is the passing marks, how many students have failed :
(A) 1 (B) 2
(C) 3 (D) None of these

Comprehension/Passage (Q.22 to 24):

The word percent is an abbreviation of the Latin phrase / word 'per centum' which means *per hundred or hundredths.*

Thus, the word 'percentage' literally means *per hundred or every hundred*'. Therefore whenever we calculate something as a part of 100 that 'part is numerically termed as percentage'.

In short 'percentage is written as P.C. and symbolically it is denoted as %.

To express a% as a fraction, divide a by 100 i.e.,

$$a\% = \frac{a}{100}$$

22. Find 12% of Rs. 1200.
(A) 142 (B) 144
(C) 156 (D) 160

23. What is 15 percent of Rs. 34 ?
(A) Rs. 3.40 (B) Rs. 3.75
(C) Rs. 4.50 (D) Rs. 5.10

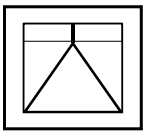
24. What is 45% of 500?
(A) 125 (B) 325
(C) 225 (D) 250

MENTAL ABILITY

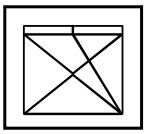
Comprehension/Passage (Q.25 to 27):

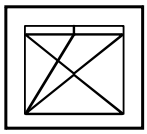
In the following Question Nos. 25 to 27, there is a question figure, which is embedded in one of the answer figures. Trace out that correct figure.

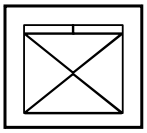
25. Question figure

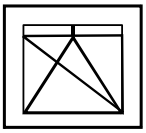


Answer figures

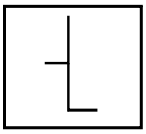
(A) 

(B) 

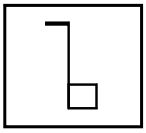
(C) 

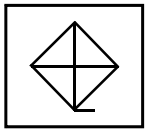
(D) 

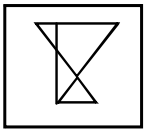
26. Question figure

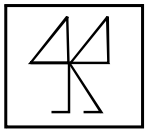


Answer figures

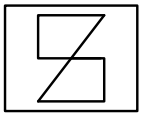
(A) 

(B) 

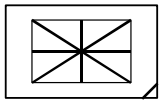
(C) 

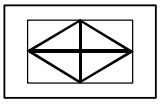
(D) 

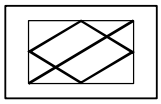
27. Question figure

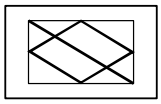


Answer figures

(A) 

(B) 

(C) 

(D) 

Comprehension/Passage (Q.28 to 31) :

Read the information carefully and answer the questions based on it.

(i) Six flats on a floor in two rows facing north and south are allotted to P, Q, R, S, T and U.

(ii) Q gets a north facing flat and is not next to S.

(iii) S and U get diagonally opposite flats.

(iv) R next to U, gets a south facing flat and T gets a north facing flat.

28. Whose flat is between Q and S ?

(A) T (B) U

(C) R (D) P

29. The flats of which of the other pairs than SU, is diagonally opposite to each other ?

(A) PT (B) QP

(C) QR (D) TS

30. If the flats of T and P are interchanged, whose flat will be next to that of U ?

(A) Q (B) T

(C) P (D) R

31. To arrive at the answers to the above questions, which of the following statements can be dispensed with ?

(A) None (B) (i) only

(C) (ii) only (D) (iii) only