



SCIENCE

School Level Examination

GRADE

9

DO NOT OPEN THIS BOOKLET UNTIL INSTRUCTED TO DO SO

- * All questions are compulsory.
- * Read the instructions on the **ANSWER SHEET** and fill in your **NAME, CLASS and OTHER INFORMATION**.

To mark your choice of answer by darkening the circles in the Answer Sheet, use an **HB Pencil** only.

- * You **MUST** record your answers on the **ANSWER SHEET**.
- * There are 50 **MULTIPLE CHOICE QUESTIONS**. Use the information provided to choose the **BEST** answer among the four possible options.

On your **ANSWER SHEET** fill in the oval that matches your answer.

- * Marks are **NOT** deducted for incorrect answers.
- * Return the **Answer Sheet** to the invigilator at the end of the examination.
- * Write your Roll No. on the Question Paper too and take it home for future reference.
- * You are **NOT** allowed to use a calculator.

You may use a ruler and spare paper for rough work.

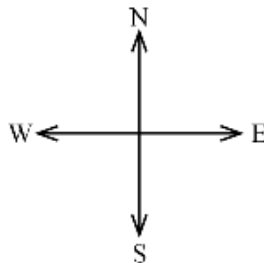
Section - A

(This section contains 10 multiple choice questions. Each question has four choices (A), (B), (C) and (D), out of which only ONE is correct.)

1. If SCIENCE can be coded as HXRVMXV, MATHS can be coded as NZGSH, LOVE can be coded as _____.
(A) LOVE (B) RTYU
(C) WQER (D) POHJ
2. Find the number of triangles in the given diagram.



- (A) 15 (B) 16
(C) 8 (D) 14
3. In an assembly row, Sarthak is standing at 24th position starting from either end. How many boys are there in the row?
(A) 48 (B) 24
(C) 45 (D) 47
 4. Rajat walks 5 m towards South, then 2 m towards East and then 2 m towards South again. He then moves 4 m towards West, and 7 m towards North. Which direction should he take to reach the starting point?



- (A) South (B) East
(C) West (D) North
5. Pick the odd one out.
(A) $500 : 41\frac{2}{3}$ (B) $400 : 33\frac{1}{3}$

- (C) $100 : 8\frac{1}{3}$ (D) $300 : 24\frac{1}{3}$
6. Which of the following does not belong to others?
 (A) Vessels (B) Chambers
 (C) Walls (D) Vision
7. Arrange the following words in a meaningful order.
 1. Chair 2. Tree 3. Wood
 4. Seed 5. Plant
 (A) 4, 5, 2, 3, 1 (B) 1, 3, 2, 4, 5
 (C) 4, 5, 3, 2, 1 (D) 1, 2, 3, 4, 5
8. A_2GHY , AG_4HY , $_____?$, $AGHY_8$
 (A) AGH_3Y (B) AGH_4Y
 (C) AGH_6Y (D) AGH_2Y
9. Four newly born babies were weighed by the doctor. In her report, she pointed out that the weight of child 'A' is lighter than B, the weight of child 'C' is lighter than 'D', the weight of child 'B' is lighter than D. Who is heaviest?
 (A) C (B) B
 (C) D (D) A
10. From the alternatives, which one is the same as $7 : 56 : 70$.
 (A) $9 : 72 : 90$ (B) $8 : 64 : 78$
 (C) $8 : 72 : 88$ (D) $9 : 54 : 70$

Section - B

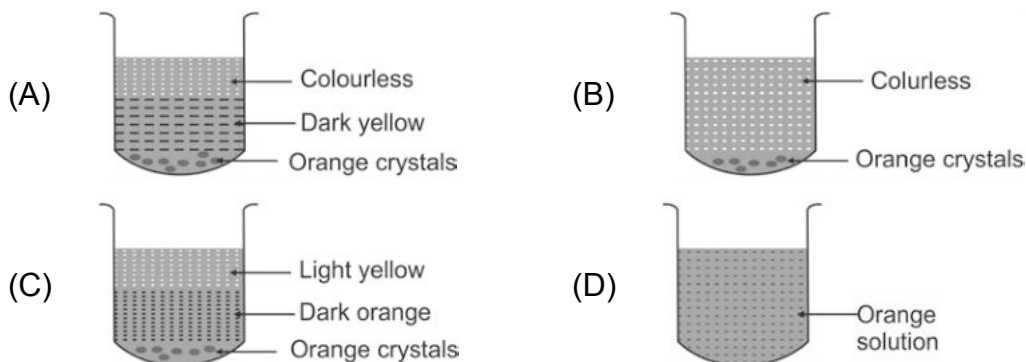
(This section contains 25 multiple choice questions. Each question has four choices (A), (B), (C) and (D), out of which only ONE is correct.)

11. During an experiment, 8 g of baking soda was added in acetic acid (vinegar) solution in a test tube. After that, a cork is fixed at the mouth of the conical flask so that no gas can escape. The weight of the flask with baking soda was 30 g. After the reaction, carbon dioxide was produced. Now what would be the weight of the flask and why?
 (A) 30 g, mass is conserved. (B) 22 g, some of the CO_2 will escape.
 (C) 28 g, gas is lighter than solid. (D) None of the above
12. Which of the following diseases is transmitted through vectors?

I. Malaria II. Spanish flu III. Kala-azar IV. Heart diseases

- (A) I and II (B) I, II and III
 (C) II, III and IV (D) I, II, III and IV

13. A few crystals of orange potassium dichromate (VI) were added in a beaker of water which was covered with a watch glass and kept still without stirring for 2 hours. Which of the following best depicts the change after 2 hours?



14. Xanthophyll is chiefly responsible for _____ colour.

- (A) White (B) Red
 (C) Yellow (D) Green

15. Which isotope is used in the treatment of tumours?

- (A) U-235 (B) I-131
 (C) Co-60 (D) Na-24

16. Match the following:

Column I	Column II
(1) Nervous tissue	(i) Stores fat
(2) Adipose tissue	(ii) Simple squamous epithelium
(3) Tissue forms inner lining of mouth	(iii) Helps in repair of tissues
(4) Areolar tissue	(iv) Present in brain

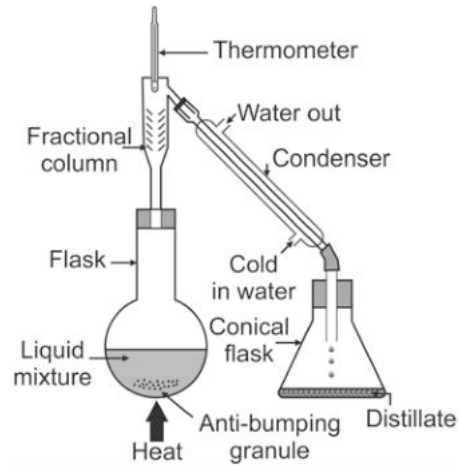
(A) (1)–(i), (2)–(ii), (3)–(iii), (4)–(iv) (B) (1)–(iii), (2)–(ii), (3)–(i), (4)–(iv)

(C) (1)–(iv), (2)–(i), (3)–(ii), (4)–(iii) (D) (1)–(iv), (2)–(iii), (3)–(ii), (4)–(i)

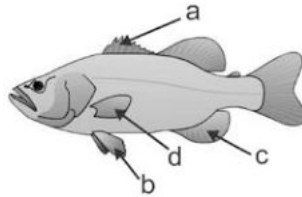
17. Which of the following organelle has their own genome?

- (A) Nucleus (B) Ribosomes
 (C) Lysosomes (D) Endoplasmic Reticulum

18. The given setup was used by a student to separate a mixture of ethanol and water. Which of the following is an error in the given setup?



- (A) The direction of flow of water through the condenser is wrongly aligned.
 - (B) A wrong container was used to collect distillate.
 - (C) The thermometer was placed too high in the fractional column.
 - (D) The conical flask containing the distillate was fitted with cork.
19. Identify a, b, c and d, respectively in the given diagram.



- (A) Dorsal fin, Caudal fin, Pelvic fin, Anal fin
 - (B) Caudal fin, Dorsal fin, Anal fin, Pelvic fin
 - (C) Dorsal fin, Caudal fin, Anal fin, Pelvic fin
 - (D) Anal fin, Pelvic fin, Dorsal fin, Caudal fin
20. In a science exhibition, Reema observed an experiment of paper chromatography. 3 spots of brown, black and blue colour were observed on the chromatogram, taken from the given ink. What conclusion can be drawn from this?
- (A) The ink consists of 3 colour – brown, black and blue.
 - (B) Chromatogram consists of 3 colour – brown, black and blue.
 - (C) Ink is pure.
 - (D) Chromatogram is made up of black and blue colour.
21. Match the following.

(1) Hydra	(i) Monera
(2) Thallophyta	(ii) Algae
(3) Anabeana	(iii) Coelenterata

- (A) (1)-(iii), (2)-(ii), (3)-(i) (B) (1)-(iii), (2)-(i), (3)-(ii)
- (C) (1)-(ii), (2)-(i), (3)-(iii) (D) (1)-(i), (2)-(ii), (3)-(iii)
22. Air-filled balloons work on the principle of _____.
- (A) Conservation of Momentum (B) Conservation of Energy
- (C) Conservation of Mass (D) Conservation of Inertia
23. A sample of C_2H_6 gas has the same mass as 1.5×10^{20} molecules of CH_4 . How many C_2H_6 molecules does the sample of ethane contain?
- (A) 8×10^{21} molecules (B) 8×10^{20} molecules
- (C) 8×10^{19} molecule: (D) 8×10^{18} molecules
24. Wind pattern in the given area helps us to decide _____.
- (A) Amount of oxygen in the air (B) Rainfall Pattern
- (C) Global warming effects (D) All of these
25. Increase in productivity per area can be increased by _____.
- (A) Biofertiliser (B) Crop Rotation
- (C) Intercropping (D) None of these
26. An object has mechanical energy but its momentum is zero. Which of the following are correct inferences?
- I. Kinetic energy = 0 II. Velocity = 0
- III. It has potential energy IV. Mass = 0
- (A) I and II (B) I, II, III and IV
- (C) I, II and III (D) II and III
27. Which of the following is striated muscle?

(A)



(B)



(C)



(D) None of these

28. The speed of the pulse is _____.
- (I) inversely proportional to square root of mass per unit length of the string.
 (II) proportional to square root of tension given to string.
 (III) directly proportional to square root of mass per unit length of string.
 (IV) inversely proportional to square root of lesion given to string.
- (A) (I) and (IV) (B) (III) and (IV)
 (C) (I) and (II) (D) (II) and (III)

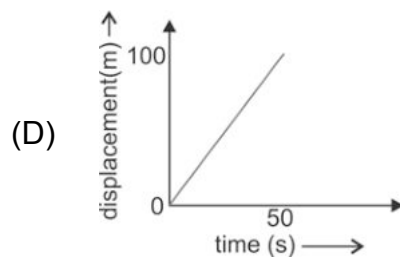
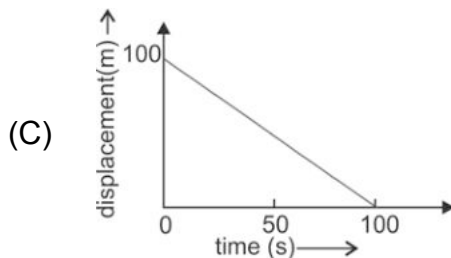
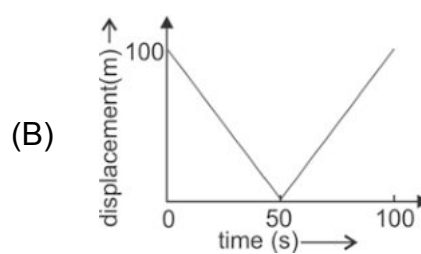
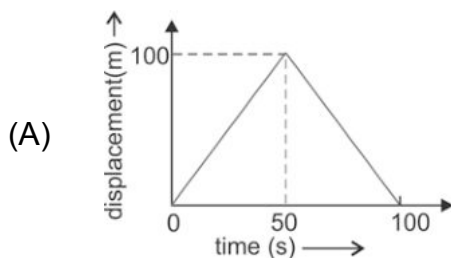
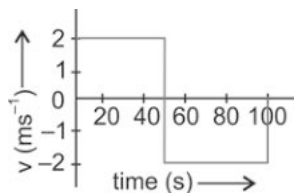
29. Which of the following statements satisfy Newton's Third Law of motion?

- (A) Hitting the table with hands (B) Riding a bicycle
 (C) Wearing a seat belt in the car (D) None of the above

30. An ion with mass number 37 has one unit negative charge. If the ion has 11.1% more neutrons than electrons, then which ion is it?

- (A) (B) Br^-
 (C) (D) F^-

31. A girl walks along a straight path to her school and comes back to the initial position. Her velocity-time graph is represented on the right hand side. Which of the following is the correct displacement time-graph?



32. Which of the following statements is incorrect?

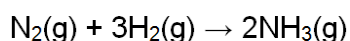
- (A) Sodium is a divalent cation.

- (B) Phosphate is a negatively charged ion.
- (C) Sulfur is a polyatomic molecule.
- (D) The number of atom of all elements present in a molecule is called its Atomicity.
33. A cube of side 5 cm immersed in tap water and then in seawater. In which case, will it experience greater buoyant force? If the side of the cube is reduced to 4 cm, what will be effect on the buoyant force experienced by the cube as compared to first case?
- (A) In tap water, buoyant force will be more, smaller cube will feel less buoyant force.
- (B) In seawater, buoyant force will be more, smaller cube will feel more buoyant force.
- (C) In seawater, buoyant force will be more, smaller cube will feel less buoyant force.
- (D) None of these
34. A force of 5 N produces an acceleration of 10 m s^{-2} on mass m_1 kg and acceleration of 30 m s^{-2} on mass m_2 kg. What will be the acceleration which would provide the same force if both masses are tied together?
- (A) (B) 6.67 m s^{-2}
- (C) (D) 15 m s^{-2}
35. An object is moving from the rest position under a constant acceleration of 18 m/s^2 . The distance travelled by this object is 36 m. How much time was consumed to cover this distance?
- (A) 4 s (B) 2 s
- (C) 12 s (D) 18 s

Section - C

(This section contains 10 multiple choice questions. Each question has four choices (A), (B), (C) and (D), out of which TWO are correct.)

36. 1 mole of nitrogen was mixed with 3 moles of hydrogen. What will be the observations for the given reactions?

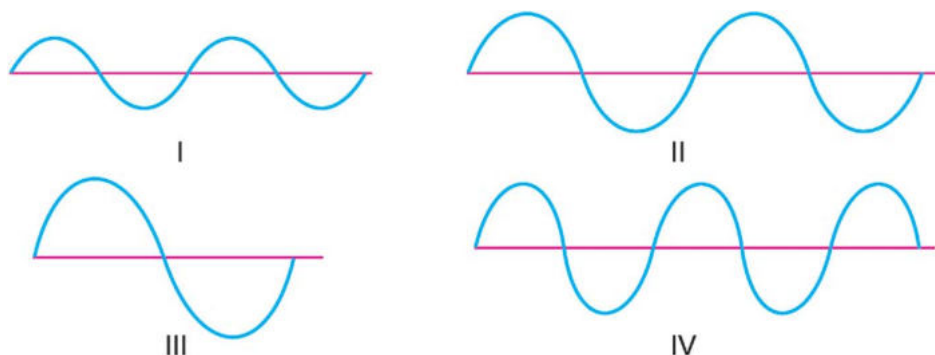


- (A) 4 moles of ammonia can be produced by using 2 moles of nitrogen.

- (B) 1 mole of ammonia can be produced by using 1.5 moles of hydrogen.
- (C) 2 moles of nitrogen can be used to produce 1 mole of ammonia.
- (D) All of these
37. Choose the INCORRECT statements.
- (A) The shape of the guard cell is like that of a bean.
- (B) Ribosome manufactures proteins and enzymes.
- (C) Golgi Body acts as transport channel.
- (D) Endoplasmic Reticulum is known as the kitchen of the cell.
38. Oxygen cylinders used in hospital have a liquefied gas in them. Which of the following helps to attain the liquefied gas?
- (A) Decreasing Temperature (B) Decreasing Pressure
- (C) Increasing Temperature (D) Increasing Pressure
39. Which of the following are the CORRECT statements?
- (A) A man can jump higher on moon than on Earth.
- (B) A man can jump lesser on moon than on Earth.
- (C) The gravitational pull on the moon is lesser than Earth.
- (D) The gravitational pull on the moon is more than Earth.
40. Due to less amount of gas, two hot air balloons fall down and drop at the North Pole and the South Pole from the same height. Which of the following statements are true regarding this?
- (A) The value of g is maximum at both the poles.
- (B) The value of g at equator is 9.78 m/s^2
- (C) The value of g is minimum at both the poles.
- (D) None of these
41. Choose the CORRECT statements.
- (A) AIDS can be caused by shaking hands and sharing food.
- (B) Cancer can be prevented by vaccination.
- (C) Trypanosoma causes sleeping sickness.
- (D) Gull's disease is associated with Myxedema.
42. Which statements are NOT correct for acute diseases?
- (A) Asthma attack is an acute disease.

- (B) Common cold is a chronic disease.
- (C) They cause drastic, long-term bad effects.
- (D) These last for only short periods.

43. Identify the CORRECT statements about given diagrams.



- (A) I represents a soft note (least louder)
 - (B) IV is high pitch (high frequency) and long wavelength
 - (C) III represents high pitch (low frequency) and long wavelength
 - (D) II represents louder note has more amplitude than I
44. Which of the following statements are false?
- (A) Rutherford discovered the nucleus.
 - (B) Neutron was discovered by Goldstein.
 - (C) One of the limitations of the Thomson model was that it failed to explain the arrangement of electrons and protons close to each other.
 - (D) Isobars have same atomic number but different mass number.
45. Which of the following gases are not responsible for greenhouse effect?
- (A) Fluorinated gases
 - (B) Nitrogen dioxide
 - (C) Sulphur dioxide
 - (D) Water vapor
46. On heating, limestone is required to produce Calcium oxide and Carbon dioxide. What mass of limestone is reduced to produce 84 kg of Calcium oxide and how much CO_2 gas will be formed?
- (A) 150 kg of CaCO_3
 - (B) 66 kg of CO_2
 - (C) 44 kg of CO_2
 - (D) 100 kg of CaCO_3
47. Match the following.
- | | |
|-----------------------|-----------|
| (A) Clapping of Hands | Frequency |
|-----------------------|-----------|

- (B)

Multiple Echoes	Reverberation
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- (C)

Underwater Waves	Longitudinal Waves
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- (D)

Pitch	Pulse
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48. Abscisic acid _____.

- (A) Does not combine dormancy of tubes
- (B) Does not faster leaf fall
- (C) Causes retardation in growth
- (D) Causes dormancy of seeds

49. Select the CORRECT statements.

- (A) Algae belong to the Thallophytes Kingdom.
- (B) Body cavity organization is also an important criterion for classification of animals.
- (C) Meristematic Tissue can be divided into Xylem and Phloem.
- (D) Bryophytes have vascular tissues.

50. Which of the following statements are correct?

- (A) The secondary or intermediate host of *Taeniasoliumis* pig.
- (B) The secondary or intermediate host of *Taeniasoliumis* snail.
- (C) The secondary or intermediate host of *Taeniasoliunis* dog.
- (D) The host of fully developed bladderworms are ineffective to the human host.

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