

INTERNATIONAL INDIAN SCHOOL, DAMMAM
SECOND TERM EXAMINATION (2017-18)
SCIENCE
SET-A



CLASS: IX

TIME: 3Hrs

MARKS: 80

GENERAL INSTRUCTIONS

1. All questions are compulsory.
2. Questions numbers **7, 12** and **18** have internal choices.
3. Question numbers **1** to **2** in section A are **one mark** questions.
5. Question numbers **3** to **5** in section A are **two mark** questions.
6. Question numbers **6** to **15** in section A are **three mark** questions.
7. Question numbers **16** to **21** in section A are **five marks** questions.
8. Question numbers **22** to **27** in section B are based on practical skills and carry **twomarks** each.

SECTION A

1. If the velocity of a body is tripled, What will be the change in its kinetic energy? 1
2. Give an example of Triatomic and poly-atomic molecule of elements. 1
3. Why do fruits fall from a tree by shaking its branch? 2
4. i) What is a cation? Give one example. 2
ii) What do the following abbreviations stand for?
a) $2O$ b) $3N_2$
5. Identify the phylum to which hydra and sea anemone belong to. Write any three distinguishing characteristics of that phylum. 2
6. Prove the law of conservation of momentum with explanation, diagram and equations. 3
7. (a) Define SI unit of work. 3
(b) A boy of mass 40 Kg runs up a vertical height of 120 stairs, each measuring 20cm. Calculate the amount of potential energy he gain? (Given $g = 10 \text{ m/s}^2$)

OR

- (a) Define SI unit of power.
- (b) A pump is used to raise water to a height of 20 m. It transfers 1800 Kg of water in 10 minutes. Calculate power of the pump? (Given $g = 10 \text{ m/s}^2$)

8. (a) State the Universal law of gravitation. Give its significance. 3
 (b) How will gravitational force of attraction between two object changes if their masses are doubled.
9. (a) State the law of constant proportion. 3
 (b) Define atomic mass unit.
 (c) Write the formula and name of the compound formed by combination of NH_4^+ and CO_3^{2-} .
10. (a) Give any two differences between Solution and colloid. 3
 (b) Name the two component of colloid.
 (c) What is a sol? Give an example.
11. An element -X contain 3 electrons as valence electrons and M shell as valence shell. 3
 (a) What is the atomic number of X?
 (b) What is the valency of X?
 (c) Identify whether X is metal or non- metal.
12. a) Define acute and chronic diseases. 3
 b) Why taking an antibiotic is not effective in common cold?
 OR
 a) Which cell organelle would you associate with ATP production? How is this organelle able to make its own proteins?
 b) A student performed an experiment by placing the de- shelled egg in a concentrated salt solution for five minutes. What changes did he observe in the egg? Give reason for the same.
13. Name the following: 3
 a) Plants that bear naked seeds.
 b) An egg laying mammal.
 c) Kingdom in which unicellular prokaryotes are placed.
 d) A reptilian having four chambered heart.
 e) Scientist who proposed five kingdom classifications.
 f) Group of plants with hidden reproductive organs.
14. Differentiate between Annelids and Arthropods. (any 3 points) 3
15. Two HIV infected siblings Anu and Nikhil were expelled from their school. Only after the intervention of a NGO, they were re-admitted. 3
 a) Which disease were the two children suffering from?
 b) Write any three modes of transmission of this disease.
 c) What is your viewpoint about both the steps taken by the school as well as the NGO?
16. (a) State the law of conservation of energy. 5
 (b) The potential energy of a freely falling object decreases progressively. Does this violate the law of conservation of energy? Why?
 (c) What is the commercial unit of energy? Derive its relationship with SI unit of energy.

17. (a) What do you mean by free fall? 5
(b) How does weight of an object changes on moving from equator to poles?
(c) A stone is dropped from a height of 19.6 m. Calculate:
i) Time taken to fall.
ii) How fast does it move at the end of this fall?
iii) Acceleration after 1 second.
18. (a) Name the technique used to separate oil from water and also the principle 5
involved in their separation.
(b) What are saturated solutions?
(c) To make a saturated solution 36g of sodium chloride is dissolved in 100 g of
water at 293 K. Find its concentration at this temperature.

OR

- (a) Write any two differences between physical and chemical changes. Give one
example in which both physical and chemical changes take place.
(b) Give two reasons for supporting that water is a compound and not a mixture.
19. (a) Give the features of Rutherford's nuclear model of atom. (Any two) 5
(b) Write two differences between isotopes and isobars.
(c) An element has an atomic number 17 and an atomic mass number 35. Draw a
diagram showing the distribution of electrons in the orbits and the nuclear
composition of the neutral atom of the element.
20. a) Classify the following as Rabi or Kharif crops: Paddy, Soyabean, Wheat and 5
mustard.
b) Why are certain crops grown in a particular season? Give two reasons.
c) Explain how is green manure formed?
21. a) Draw a neat diagram of an animal cell and label 5
i) The organelle that is the carrier of genetic information
ii) Cell organelle that releases energy.
iii) Site of protein synthesis.
iv) Cell organelle that stores proteins and enzymes, also helps in modification and
packaging of products.
b) Name any two kinds of plastids and state one function for each type.

SECTION B

22. Which one of the following statement illustrate the law of conservation of mass 2
in a reaction:
- (a) When 2.54 g of CuSO_4 solution react with 2.46 g of NaCO_3 solution then
3.00 g of Na_2SO_4 and 3.02 g of CuCO_3 are obtained.
(b) When 1.70 g of $\text{Pb}(\text{NO}_3)_2$ solution react with 0.365 g of NaCl solution then
1.435 g of PbCl_2 and 0.63 g of NaNO_3 are obtained.
(c) When 3.04 g of BaCl_2 solution react with 3.06 g of Na_2SO_4 solution then
3.50 g of BaSO_4 and 2.50 g of NaCl are obtained.
(d) When 4.50 g of AgNO_3 solution react with 2.50 g of HCl solution then 3.00
g of PbCl_2 and 3.50 g of NaNO_3 are obtained.

23. A stone is found to weigh 72gf in air and its volume is 18 cm^3 . What is the density of stone in SI system? 2
24. When dipped in a fluid, name the factor on which the loss in weight of a solid depends. And also name the two forces which act upon the solid dipped in the fluid. 2
25. What is the difference between the roots of monocot and dicot plants? 2
26. a) In which group of animals coelom is filled with blood? 2
i) Nematoda ii) Annelida
iii) Echinodermata iv) Arthropoda
b) What is the name of the excretory organ of an earthworm?
27. Name the different type of leaves fern has. 2
