Roll Number		

Code Number 86/2

INDIAN SCHOOL MUSCAT
SECOND MID TERM EXAMINATION
SCIENCE

CLASS: IX | Sub. Code: 086 | Time Allotted: 3 Hrs.

30.11.2017 | Max. Marks: 80

General Instructions:

(i) The question paper comprises two sections, A and B. You are to attempt both the sections.
(ii) All questions are compulsory.
(iii) All questions of Section-A and B are to be attempted separately.
(iv) There is an internal choice in two questions of three marks each and one question of five marks.
(v) Question numbers 1 and 2 in Section-A are one mark question. They are to be answered in one word or in one sentence.
(vi) Question numbers 3 to 5 in Section- A are two marks questions. These are to be answered in 30 words each.
(vii) Question numbers 6 to 15 in Section-A are three marks questions. These are to be answered in about 50 words each.
(viii) Question numbers 16 to 21 in Section-A are 5 marks questions. These are to be answered in 70 words each.
(ix) Question numbers 22 to 27 in Section- B are based on practical skills. Each question is a two marks question. These are to be answered in brief.

SECTION A

1. How does the force of gravitation between two objects change when the distance between them is reduced to half? 1

2. Define law of conservation of mass 1

3. a) Enumerate any two precautionary measures used while storing grains. 2
   b) What are the advantages of inter cropping?

4. a) What produces more severe burns boiling water or steam? Give reasons for your answer. 2
   b) Tiny drops of water are seen on the outer surface of water bottles when taken out from the refrigerator.

5. i) Name the tissue responsible for the movement in our body. 2
   ii) Name the type of animal tissue to which these functions can be assigned
   a. Protection of tissues by forming a layer outside and inside.
   b. Connecting different cells, tissues and organs in the body.

6. Give reasons for the following: 3
   a) Clothes do not dry fast on a humid day
   b) A table can be considered a solid
   c) Temperature remains constant during change of state.

OR

a) Give two differences between evaporation and boiling
b) Explain why air can be considered as a mixture and not a compound.

7. a) Define saturated solution. 3
b) A solution contains 40 gm of sugar in 160 gm of solution. Find mass by mass percentage concentration of the solution.

8. a) Define the term chemical formula 3
b) Write the formula of the compound formed between Aluminium and Chlorine.
c) What is the i) atomicity of Hydrogen molecule
and ii) Number of atoms in PO_4^{3-} ion

9. Using velocity - time graph, derive V2 – U2 =2as 3

10. (a) What does speedometer of an automobile measure? 3
(b) Draw distance – time graph for an object at rest.
(c) A particle is moving in a circle of diameter 5m. What is its displacement when it completes 1½ revolution?

11. (a) Name the physical quantity which is determined by the rate of change of momentum. 3
(b) A body of mass 30Kg has momentum of 150Kgms-1. Find its velocity.
(c) According to Newton's third law of motion, a ball falling towards each exerts a force on the earth but the motion of the earth ball is not noticed. Explain why?

12. (a) Define SI unit of work. 3
(b) Write an expression for the work done when a force is acting on an object in the direction of its displacement.
(c) A pair of bullocks exerts a force of 140N on a plough. The field being ploughed is 15m long. How much work is done in ploughing the length of the field?

OR

(a) State Newton's second law of motion.
(b) A cricket ball of mass 70g moving with a velcoity 0f 0.5ms-1 is stopped by a player in 0.5s. What is the force applied by the player to stop the ball?

13. a. State one major problem faced by the farmers dealing with composite fish culture. 3
b. Why is Italian bee considered to be the best yielder?

OR

a. Define Animal husbandry.
b. Give one difference between milch and draught animals.

14. a. Draw a well labeled diagram of a prokaryotic cell . 3
b. State one difference between prokaryotic and eukaryotic cell.

15. 1. What will happen if a de-shelled egg kept in a concentrated salt solution for 5 minutes. 3
2. Write any two functions of vacuoles.

16. a) Which separation techniques will you use to separate the following 5
i) A mixture of red and blue inks.

ii) Oil from water.
b) Differentiate between physical and chemical changes. Also give an example of each.
c) Give two reasons why we can call alloys as mixtures.

17. a) Calculate the number of moles in 71 gm chlorine gas 5
(Atomic mass of Cl =35.5 u)
b) Number of particles in 46 gm of Na (Sodium) Atoms (Atomic mass of Na=23u)
c) Molecular mass of C2H6 (Atomic mass of C=12u , Atomic mass of H= 1u)
d) Define polyatomic ions and give examples of positively charged and negatively charged polyatomic ions.
(i) Define mole
(ii) How is it related to Avogadro constant, relative mass and molecular mass?
(iii) What is the number of molecules in 0.25 moles of oxygen? Avogadro's no. $6.022X10^{23}$

18. (a) State and prove law of conservation of momentum. 5
(b) An object of mass 100Kg is accelerated uniformly from a velocity of 5ms-1 to 8ms-1 in 6 seconds. Calculate the initial and final momentum of the object. Also find the magnitude of the force exerted on the object.

19. (a) Relative density of gold is 19.3. The density of water is 1000Kg/m3. What is the density gold in SI units. 5
(b) State universal law of gravitation. Derive an expression for gravitational force between two bodies.

20. a. Mention the three basic criteria's for five kingdom classification. 5
b. What are saprophytes? Name the kingdom to which they belong.

OR

a. Draw a flow chart to show different divisions of kingdom plantae and answer the following –
(i) Which division has the simplest plants?
(ii) To which division pinus and cycas belong ?
(iii) What is the other name given to flowering plants? Classify them on the basis of number of cotyledons present in the seed.

21. 1. Give reason for 5
a. Branches of a tree move and bend freely without breaking in high wind velocity.
b. It is difficult to pull out the husk of coconut.
c. Write two functions of stomata
2. If a potted plant is covered with a glass jar, water vapours appear on the wall of glass jar. Explain why?

SECTION B

22. A student placed an iron cuboid of dimensions 1cm x 4cm x 10cm on the loose sand with its dimensions (a) 1cm x 4cm (b) 4cm x 10cm lie on the sand. If the pressures exerted by the cuboid in two cases are P1 and P2 respectively, then calculate P1/P2. 2

23. (1) A student noted down the following observations in his note book. 2
(I) Weight of the stone in air = 272gwt.
(II) Weight of the stone in water = 192gwt.(III) Weight of the stone in salty water = 176gwt.

The relative density of the salty water must be:

(a) 11/12 (b) 11/17 (c) 13/17 (d) 6/5

(2) The mass of a body is 10kg at place where g = 10ms-2, its weight is

(a) 1000N (b) 100N (c) 10N (d) 1N

24. Classify the following as homogeneous and heterogeneous mixtures 2

a) Sand and sawdust
b) Salt and water
c) Chalk and water
d) Iron filings and sulphur

25. Classify the following as elements compounds and mixtures 2

a) H_2O
b) Hydrogen
c) Oxygen in water
d) Soil

26. Rekha was given a slide of striated muscle. She could easily identify the slide by observing it under the microscope. Write any two main features which helped her to identify the same. 2

27. 1. Name the acid used to test the metanil yellow in dal. 2

2. While doing an experiment with a potato, a student accidently dropped a liquid on it, which made the potato slice blue-black. Name the liquid that got dropped.

End of the Question Paper