MANAVA BHARATI
INDIA INTERNATIONAL SCHOOL

MID TERM EXAMINATION (2017-18)
SUBJECT: SCIENCE
CLASS : IX

TIME 3 HOURS **M.M 80**

Important instructions:

1. All questions are compulsory.
2. The question paper comprises of two sections, A and B, you are to attempt both the sections.
3. There are three overall choices in the question paper.
4. Q. No. 1 and 2 in section A are very short type question of 1 mark.
5. Q. No 3 to 10 in section A are short answer type questions of of 2 marks each.
6. Q. NO. 11 to 20 in section A are short answer type question of 3 marks each.
7. Q. No. 21 to 24 in section A are long answer type question of of 5 marks each.
8. Q. No. 25 to 30 in section B are 2 marks each and based on practical skills.
9. Physics Questions: Q.No. 2,4,5,9,10,11,16,17,24,29,30
   Chemistry Questions: Q.No 1, 3, 7,12,15,19,21,27,28
   Biology Questions: Q.No 6, 8, 13, 14,18,20,22,23,25,26

C 1. What is the effect of increase in temperature on the solid state of matter?

P 2. Define momentum and mention its SI unit.

1 mark

C 3. Give two reasons to justify the following observations
   (I) Liquids generally have lower density than solids, but ice floats on water.
   (II) Desert cooler is effective on hot and dry day but not on hot and humid day.

P 4. Why can a small mass such as bullet kill a person when fired from a gun?

5. What do you mean by average speed? What is its SI unit?

6. Draw and label parts of basic unit of nervous system and outline its structural features.

7. Write the appropriate methods to separate the following mixtures:
   (a) Butter / cream from milk (b) Salt from sea water
   (c) Drugs from blood (d) Different gases from the air.

8. Name the chemical substance which makes the wall of sclerenchyma cells thick also mention its function. And Name the cells which make a bone and a cartilage.

9. A particle with a velocity of 2m/s at t=0 moves along a straight line with a constant acceleration of 0.2 m/s^2. Find the distance covered by the particle in 10s.

10. Tabulate the difference between G and g (two points)

11. State Newton's Second law of motion. Show various steps for the derivation of formula F=ma

OR

State Law of conservation of momentum. Derive it mathematically.

12. At what temperature in the Kelvin scale does water boil? Explain what happens when we supply heat energy to water till it changes its state. What is this heat energy called?

13. Explain the component and functions of Phloem tissue.

OR

Explain the components and functions of Xylem tissue.

B 14. Enlist differences between following:

(a) Smooth and Rough Endoplasmic reticulum

(b) A Prokaryotic and a Eukaryotic cell

C 15. Design an experiment to show that ammonium chloride undergoes sublimation and draw a labelled diagram to illustrate the process.

P 16. When you pull your arms back while catching a fast moving ball, chances of hurting your hands are low. Explain this on the basis of Newton's law.

P 17. Derive the following equation of motion $v^2-u^2= 2as$.

B 18. Write in steps the procedure for hybridization and for the production of genetically modified organisms.

C 19. How colloids are different from suspension (any four points).
Identify the colloids from the following - Copper sulphate solution, Milk, Solution of sugar and smoke.

B 20. What will happen if an animal cell or plant cell is put in solution of sugar or salt medium having higher concentration than the cell? Explain the process.

C 21. How does fractional distillation differ from simple distillation process? Draw a labelled diagram of the apparatus used in fractional distillation.

B 22. Explain any five reasons for which variety improvement is done.

Or

Explain in detail various methods of irrigation

23. Write in tabulation differences between manures and fertilizers. (Any five)

24. (a) State universal law of gravitation. Derive its mathematical expression.
(b) A body weighs 120 N on earth. Find its approximate weight on the moon

Section B

25. You are shown a microscopic preparation revealing sclerenchyma, write its features which you have observed.

26. How will you identify the tissue lying under skin? Name the dye used for making temporary mount.

27. A small amount of iron sulphide in powdered form is taken in a test tube and 5ml of carbon disulphide is added to it and the test tube is vigorously shaken. Write your observations.

28. How would you confirm in your school laboratory whether a given solution is a suspension or not?

29. Define density and mention its SI unit.

30. In a spring balance the space between the space 0and 25 g marks is divided in to 10 equal parts. Calculate the least count of the spring balance.

$(a-b)[a^2-b^2+ab]$