Roll Number		

SET A

INDIAN SCHOOL MUSCAT
HALF YEARLY EXAMINATION
SCIENCE

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

17.09.2019 Max. Marks: 80

General Instructions:

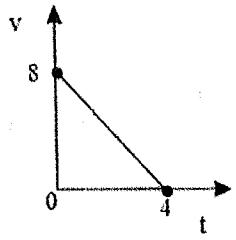
(i) The question paper consists of Two sections – A and B. You need to attempt all the sections.
(ii) All questions are compulsory.
(iii) Internal choice is given in section B.
(iv) Question numbers 1 to 20 in Section - A are one-mark questions.
(v) Question numbers 21 to 30 in Section- B are three marks questions. These need to be answered in about 50 words each.
(vi) Question numbers 31 to 36 in Section-B are 5 marks questions. These need to be answered in about 70 words each.

Section - A

1. A particle is moving around a circular path of radius r. What will be its displacement after half a circle? 1

(a) 0 (b) $2\pi r$ (c) 2r (d) r/2

2. The velocity-time graph of an object moving with non-uniform velocity is shown below. The acceleration of the object. 1

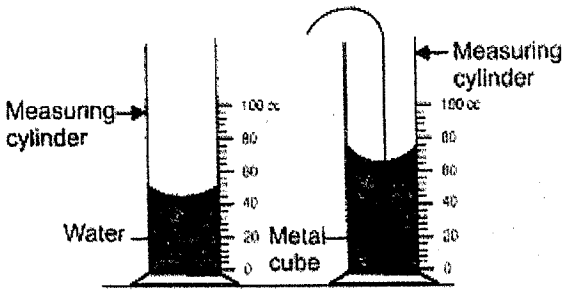


(a) $2m/s^2$ (b) $4m/s^2$ (c) $3m/s^2$ (d) $-2m/s^2$

3. Same force acts on the objects A, B, C and D having mass 1Kg, 2Kg, 3Kg and 4Kg respectively. Which of the objects has least acceleration? 1

(a) A (b) B (c) C (d) D

4. The water level in a measuring cylinder, before and after immersing a metal cube in it, is shown in the figure. The volume of the metal cube is: 1



(a) 24 cm^3 (b) 22 cm^3 (c) 20 cm^3 (d) 18 cm^3

5. Which one of the following is a homogeneous mixture?
(a) Vinegar (b) Milk (c) Ink (d) Sugar

6. A homogeneous mixture of solute and solvent is called a:
(a) solution (b) suspension (c) colloid (d) emulsion

7. The size of particles in a true solution is:
(a) less than 1nm (b) more than 1000 nm
(c) more than 1 nm (d) in between 1 and 1000 nm

8. Which one of the following mixtures can be filtered?
(a) salt and water (b) milk and water.
(c) sugar and water (d) chalk powder and water.

9. The cell inclusion which provides turgidity and rigidity to the plant cell
(a) Mitochondria (b) Vacuole (c) Nucleus (d) Golgi apparatus

10. In which group of plant kingdom, the organisms which are predominantly aquatic included
(a) Thallophyta (b) Pteridophyta (c) Gymnosperms (d) Bryophyta

11. Write two precautions we should observe while doing the activity of temporary slide preparation of human cheek cells.

12. Write any two observations you make while observing the prepared slide of an onion peel.

13. Why alveoli of the lungs lined with simple squamous epithelial tissue?

14. Read the statements carefully and select the appropriate option given from the general instructions:
Assertion: Cotyledons are called the seed leaves in angiosperms
Reason: In many instances cotyledons emerge and become green when the seed germinates.

15. Four measuring cylinders with least count 2.5 ml, 1.0 ml, 0.5 ml and 0.2 ml are available. Which one should be preferred for finding the density of a solid accurately? 1

16. Name the physical quantity that measures the state of inertia. Write its S.I. unit. 1

17. The Mass of object A is 6Kg whereas that of another object B is 34Kg. Which of the objects, A or B, has more inertia and why? 1

18. What is meant by melting point? What happens to the melting point of ice when salt is added to it?

19. Define the term latent heat of vaporisation.

20. Why is cooling with crushed ice better than cooling with ice water?

Section - B

21. Two bodies A and B of same mass are moving with velocities v and 3v respectively. Compare their (a) inertia (b) momentum (c) the force needed to stop them in the same time.

OR

Explain the following: 1+1+1

a) Some of the leaves may get detached from a tree if we vigorously shake its branch.
b) An athlete always runs some distance before taking a jump.
c) While getting down a moving bus, a person moves in the same direction as that of the bus.

22. State Newton's second law of motion. Derive F = ma. 3

23. An artificial satellite is moving in a circular orbit of radius 42250Km. Calculate its speed if it takes 24 hours to revolve around the earth. 3

OR

Abdul, while driving to school, computes the average speed for his trip to be 20Kmph. On his return trip along the same route, there is less traffic and the average speed is 40Kmph. What is the average speed for Abdul's trip?

24. a) Explain the terms:
i) Condensation ii) Vaporisation
b) Name and define one property common to liquids and gases which tells us that their molecules are moving constantly.

OR

Give three differences between solution and suspension.

25. a) Give one example for:
i) a liquid metal
ii) a liquid non-metal iii) a metalloid
b) What is a compound? Give one example.

26. a) What do you mean by concentration of a solution?
b) 20g sugar is added to 140g water and stirred to get a solution. Find the percentage mass concentration of the solution.

OR

a) What is a saturated solution? What happens when it is heated?
b) Name the solute present soda water?
c) Name the process by which we separate a mixture of ammonium chloride & sand.

27. a) The flexibility of which part of the cell in Amoeba helps them to obtain food. Name the process.
b) Describe how Fungi can withstand very dilute external medium.
c) Name the process by which gaseous exchange take place through the cell

OR

Nucleus is considered as the important part of the cell. Why? Write any two points in favor of this statement. What is the name given to an undefined nuclear region? In which cell it is found?

28. Yeast and Amoeba are unicellular Eukaryotic organisms. But they are placed under two different kingdoms. Name their respective kingdoms. Write any one specific character of these two organisms which separates them.

29. Write the specific functions of epidermis in leaves, roots and in desert plants.

30. Differentiate cryptogams and phanerogams.

31. a) Draw velocity –time graph for a uniformly accelerated object. Using velocity-time graph, derive $V^2 - U^2 = 2aS$. 3+2

b) A racing car has a uniform acceleration of $4ms^{-2}$. What distance will it cover in 10 sec after start?

OR

a) Draw velocity – time graph for a uniformly accelerated object. Using velocity- time graph, derive $\mathbf{S = Ut + \frac{1}{2} at^2}$.

b) A train is travelling at a speed of 90kmph. Brakes are applied so as to produce a uniform acceleration of $-0.5ms^{-2}$. Find how far the train will go before it is brought to rest?

32. State and prove conservation of momentum. 1+4

33. a) Write 3 differences between evaporation and boiling 5

b) Write 4 factors which can affect the speed of evaporation.

c) Name the physical state in which the particles possess:

i) minimum attraction.

ii) minimum kinetic energy

iii) maximum space

OR

a) Write 3 characteristics of particles of matter.

b) Explain why

i) liquids have definite volume but no definite shape.

ii) diffusion is fastest in gases.

c) What is dry ice? What happens when it is exposed to air?

34. a) i) What is the method by which we separate cream from milk? 5

ii) Name the apparatus used and write its principle.

iii) Give two other applications of this method.

b) Write three differences between metals and non-metals.

35. a) Define differentiation. 5

b) Why Xylem and Phloem are called conductive tissues

c) Write the functions of any three simple permanent tissues in plants.

OR

What are the specific characters of connective tissues? (any two)

Write the function, composition and location of any two connective tissues.

36. Draw a neat diagram of plant cell with all cell inclusions. 5
Label the following parts in it.
a) Cell wall
b) Golgi apparatus
c) Rough endoplasmic reticulum
d) Nucleus
Which are the two organelles having their own DNA and ribosomes.

End of the Question Paper