INDIAN SCHOOL SOHAR
FINAL EXAMINATION- (2018 -19)
SUBJECT: SCIENCE

CLASS: IX   Max. Marks: 80
DATE: 05/03/2019   Duration: 3Hrs

General Instructions:-

i. The question paper comprises of five Sections- **A, B ,C, D and E**. You are to attempt all the sections.
ii. Question paper consist of **27** questions. **All** questions are compulsory.
iii. Internal choice is given in Sections- **B, C, D and E**.
iv. Question numbers **1** to **2** in Section-**A** are **one** mark questions. These are to be answered in one word or in one sentence.
v. Question numbers **3** to **5** in Section-**B** are **two** marks questions. These are to be answered in about 30 words each.
vi. Question numbers **6** to **15** in Section-**C** are **three** marks questions. These are to be answered in about 50 words each.
vii. Question numbers **16** to **21** in Section-**D** are **five** marks questions. These are to be answered in about 70 words each.
viii. Question numbers **22** to **27** in Section-**E** are **two** marks questions based on practical skills. These are to be answered in brief.
ix. There is no overall choice. However an internal choice will be provided in one question of two marks, three questions of **3** marks each, three questions of **5** marks each and three question (for assessing the practical skills) of **2** marks. Attempt only one of the choices in such questions.
x. Wherever necessary the diagrams drawn should be neat and properly labelled.

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SECTION-A

1**.** What is a nucleoid?   1

2. What is meant by a pure substance?   1

SECTION B

3**.** a) What are longitudinal waves?
 b) Draw the graphical representation of a longitudinal wave.

OR

a) Name the physical quantity denoted by:
        i) the slope of the distance - time graph.
        ii) the area under the velocity - time graph.
b) Velocity time graph for the motion of an object in a straight path is a straight line parallel
    to the time axis. Draw the distance time graph for this type of motion.   2

4. An animal is dorsoventrally flattened. It has three embryonic germ layers and is acoelomate.
   a) Which phylum does it belong to?
   b) What are they commonly called?
   c) Name the type of symmetry these animals exhibit.
   d) Give one example.   2

5. Atomic number of an element Y is 17.
   a) Draw the atomic structure of Y.
   b) What is the number of valence electrons in Y?
   c) How many electrons are needed to complete the octet of Y?   2

SECTION C

6. Draw a neat labelled sketch of the Carbon cycle in nature.   3

7. a) Why does a sharp knife cut better than a blunt knife?

   b) Define relative density of a substance. If the relative density of silver is 10.8 and the density of water is 1000kg/m^3. What is the density of silver in **SI** unit?   3

8. a) Write any two importance of universal law of gravitation.

   b) Differentiate between the mass of an object and its weight. (Write any two points)   3

9. a) State the commercial unit and **SI** unit of energy.

   b) A battery lights a bulb. Describe the energy changes involved in the process.

   c) What is the work done by the force of gravity on a satellite moving around the earth? Justify your answer.   3

10. A car travels from stop **A** to stop **B** with a speed of 30km/h and then returns back to **A** with a speed of 50km/h. Find the:
    i) displacement of the car.
    ii) average speed of the car.

<div align="center">OR</div>

  a) A stone dropped from the roof of a building takes 4s to reach the ground. Calculate the height of the building.(Given g=10m/s^2)

  b) A force of 2N acting on a body changes its velocity uniformly from 2m/s to 5m/s in 10s. Calculate the mass of the body.   3

11. a) Identify the dispersed phase and dispersing medium in coloured gem stone.

   b) 110 g of salt is present in 550 g of solution. Calculate the concentration of the solution.   3

12. With the help of a labelled diagram, describe in brief an activity to show sublimation of ammonium chloride.

<div align="center">OR</div>

  Give reason for the following:
  a) Ice at 0°C appears colder to the mouth than water at 0°C.
  b) A liquid generally flows easily.
  c) Doctors advise to put strips of wet cloth on the forehead of a person having high temperature.   3

13. a) How are broilers different from layers?

   b) Why did cattle breeders choose to cross breed a Jersy cow with a Red Sindhi cow?   3

14. What are the three limitations one has to face while dealing with an infectious diseases?   3

15. State one function of the following:
   a) Vacuole of a plant cell.
   b) Golgi apparatus.
   c) Nucleus.

<div align="center">OR</div>

  Identify the type of tissue in the following:
  a) Bone   b) Skin   c) Leaf stalk
  d) Lining of kidney tubule   e) Vascular bundle   f) Brain.   3

SECTION D

16. a) Define kinetic energy. Derive an expression for kinetic energy possessed by an object of mass **m**, moving with velocity **v**.

   b) How is the kinetic energy of a moving body affected if its velocity is tripled?

   c) A ball of mass 400g rolls on a ground with uniform speed of 25m/s. Find the kinetic energy possessed by it.

OR

   a) Derive the mathematical relation of Newton's second law of motion.

   b) When a sailor jumps from the boat to the river bank, the boat is pushed away from the river bank. Give reason.

   c) A girl of mass 40kg jumps with a horizontal velocity 5m/s onto a stationary cart with frictionless wheels. The mass of the cart is 3kg. What is her velocity as the cart starts moving? Assume that there is no external unbalanced force working in the horizontal direction.　　　　5

17. a) Mention one use for each of the following:

       i) Isotope of cobalt

       ii) Isotope of iodine.

   b) An ion X^{2-} contains 10 electrons and 8 neutrons. What are the atomic number and mass number of the element X?

   c) List three main features of Rutherford's nuclear model of an atom.　　　　5

18. a) Give one example each for a monoatomic and a polyatomic molecule.

   b) Calculate the formula unit mass of K_2CO_3.[Atomic masses : K-39u,C-12u ,O-16u].

   c) Name the compounds represented by the following formulae:

      i) Mg_3N_2　　　　　　　　ii) $Al_2(SO_4)_3$.

   d) Write any four postulates of Dalton's Atomic Theory.

OR

   a) Name the elements present in Ammonium Phosphate.

   b) Calculate the following quantities in 5.6 g of nitrogen. [Atomic mass: N is 14u]

      i) Number of moles of N_2　　　ii) Number of molecules of N_2.

   c) Calculate the molar mass of Calcium Hydroxide. [Atomic masses : Ca-40, O-16, H-1]　　　　5

19. a) Identify the organisms **A** & **B** given below.

   b) Mention the class to which they belong and write two important features.

   c) State one difference between them.

       A　　　　　　　　　　　　　　　　　　　**B**

   d) Classify the following organisms to their respective phylum.　　　　5

      i) Sea anemone　　　　ii) Earthworm

20. a) What is ultrasound? Write any two industrial uses of ultrasound. Why cannot we use longer wavelengths for such uses?

   b) State the relationship between frequency and time period of a wave.

   c) If velocity of sound in air is 340m/s, calculate the:

      i) wavelength when frequency is 256Hz.

      ii) frequency when wavelength is 85cm.   5

21. a) Beena could not attend the school for a week and her mother did not go to office for eight months due to different diseases.

      i) Which category of diseases are they suffering from?

      ii) State one difference between them and give an example for each.

   b) Name the following:-

      i) The bacteria which causes acne.

      ii) The protozoan that causes sleeping sickness.

   c) It was diagnosed that a patient had lost the power of fighting any infection. Name the disease the patient was suffering from and the pathogen responsible for the disease.

OR

  a) What is intercropping? Write two advantages of it.   5

  b) What are the desirable agronomic characteristics for crop improvement? (Any two points)

SECTION E

22. While studying the reflection of sound, four students **A**, **B**, **C** and **D** used different reflecting surfaces. Who would obtain the best result and why?

     A: A thermocol sheet.   B: A polished, plane metal sheet.

     C: A rough cardboard sheet.   D: A cushioned chair.   2

23. A metal ball is hung from the hook of a spring balance. The ball is first kept in air, then fully immersed in tap water and then immersed in salt water. In which case, loss of weight is maximum? Give reason for your answer.

OR

Ritu found that the spring balance given to her, to find the mass of the solid had a zero error of 5g. The least count of the spring balance is 5g and when she suspended the solid from its hook, she observed that the pointer came to 20th division. What would be the mass of the solid?   2

24. Identify the following as mixtures or compounds:

   a) table salt   b) blood

   c) sugar   d) brass.   2

25. Convert the following:

   a) -30°C into kelvin   b) 359 K to Celsius scale.

OR

  Classify each of the following as a physical or a chemical change:

    a) Churning of milk cream to get butter

    b) Drying a shirt in the sun.

    c) Mixing of iron filings and sand.

    d) Burning of kerosene.   2

26. Without uprooting a dicot plant, list any two identifying features of the same and give two examples.

OR

A student observed the slide of the spirogyra under a microscope. Name two prominent features the student should observe in the slide. 2
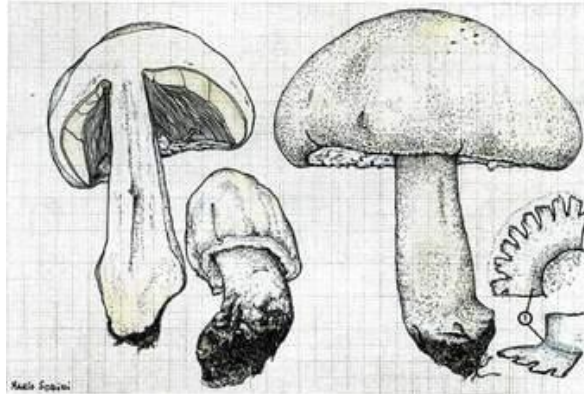
27. a) Observe the figure given below and identify the specimen.
    b) Name the group it belongs to.
    c) What is the composition of its cell wall?
    d) Why are they called as saprophytes?

2

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