

DAV BORL PUBLIC SCHOOL, BINA
Sample paper for Annual examination
Session (2019-20)

Class: IX
Time Allowed: 3 hrs.

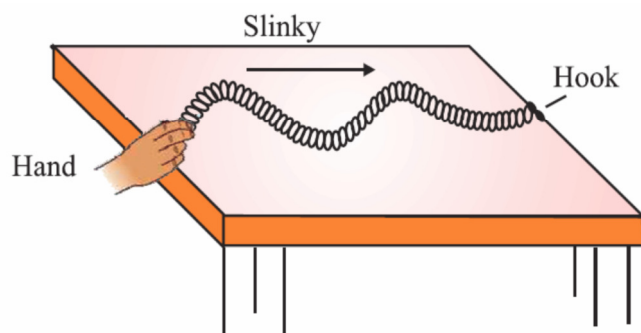
Subject: SCIENCE
Maximum Marks: 80

Instructions:

1. The question paper comprises three sections – A, B and C. Attempt all the sections.
2. All questions are compulsory.
3. Internal choice is given in each section.
4. All questions in Section A are one-mark questions comprising MCQ, VSA type and assertion-reason type questions. They are to be answered in one word or in one sentence.
5. All questions in Section B are three-mark, short-answer type questions. These are to be answered in about 50 - 60 words each.
6. All questions in Section C are five-mark, long-answer type questions. These are to be answered in about 80 – 90 words each.
7. This question paper consists of a total of 30 questions.

SECTION A

1. What is meant by crop rotation? 1
2. Define Biogeochemical cycle and list down names of any four gaseous cycle.
3. Answer question numbers 3(a) - 3(d) on the basis of your understanding



- 3(a) What Kind wave can be produced in a slinky? 1
- 3(b) Each particle in a wave propagates with in a slinky or a thread describe? 1
- 3(c) A wave produced for small interval of time. What you call it? 1
- 3(d) Which types of waves is produced in the water. 1

4. Write the electronic configuration of potassium element having $Z= 19$? 1
5. Bone matrix is rich in 1
- (a) fluoride and calcium
 - (b) calcium and phosphorus
 - (c) calcium and potassium
 - (d) phosphorus and potassium
6. The muscular tissue which function throughout the life continuously without fatigue is 1
- (a) skeletal muscle
 - (b) cardiac muscle
 - (c) smooth muscle
 - (d) voluntary muscle
7. A cell will swell up if 1
- (a) The concentration of water molecules in the cell is higher than the concentration of water molecules in surrounding medium
 - (b) The concentration of water molecules in surrounding medium is higher than water molecules concentration in the cell
 - (c) The concentration of water molecules is same in the cell and in the surrounding medium
 - (d) Concentration of water molecules does not matter
8. In a sample of ethyl ethanoate ($\text{CH}_3\text{COOC}_2\text{H}_5$) the two oxygen atoms have the same number of electrons but different number of neutrons. Which of the following is the correct reason for it? 1
- (a) One of the oxygen atoms has gained electrons
 - (b) One of the oxygen atoms has gained two neutrons
 - (c) The two oxygen atoms are isotopes
 - (d) The two oxygen atoms are isobars.
9. The inertia of an object tends to cause the object 1
- a) to increase its speed

- b) to decrease its speed
c) to resist any change in its state of motion
d) to decelerate due to friction
10. Which one of the following is not the unit of energy? 1
a) joule
b) newton metre
c) kilowatt
d) kilowatt hour
11. Which of the following correctly represent the electronic distribution in the Mg atom? 1
(a) 3, 8, 1
(b) 2, 8, 2
(c) 1, 8, 3
(d) 8, 2, 2
12. Which of the following correctly represents 360 g of water? 1
(i) 2 moles of H₂O
(ii) 20 moles of water
(iii) 6.022×10^{23} molecules of water
(iv) 1.2044×10^{25} molecules of water
(a) (i) (b) (i) and (iv)
(c) (ii) and (iii) (d) (ii) and (iv)
13. Find out incorrect sentence 1
(a) Protista includes unicellular eukaryotic organisms
(b) Whittaker considered cell structure, mode and source of nutrition for classifying the organisms in five kingdoms
(c) Both Monera and Protista may be autotrophic and heterotrophic
(d) Monerans have well defined nucleus
14. (a) Fungi shows——mode of nutrition. 1
15. Among the given options, which one is not correct for the use of large amount of fertilisers and pesticides? 1

- (a) They are eco-friendly
- (b) They turn the fields barren after some time
- (c) They adversely affect the useful component from the soil
- (d) They destroy the soil fertility

For question numbers 13 and 14, two statements are given- one labeled Assertion (A) and the other labeled Reason (R). Select the correct answer to these questions from the codes (i), (ii), (iii) and (iv) as given below

- a) Both A and R are true and R is correct explanation of the assertion.
- b) Both A and R are true but R is not the correct explanation of the assertion.
- c) A is true but R is false.
- d) A is false but R is true

- 16 Assertion (A): if two objects of different masses have same momentum, the lighter body possesses greater velocity. 1
Reason (R): for all bodies momentum always remains same.

SECTION B 1

17. State the observations from the α -particle scattering experiment which led Rutherford to make the following conclusions: 3

- a. Most space in an atom is empty.
- b. Entire mass of an atom is concentrated at its centre.
- c. Centre is positively charged.

18. Differentiate between manure and fertilisers by giving four points in a tabular form. 3

19. Give reasons: 3
- (a) A gas completely fills the vessel in which it is kept.
 - (b) A gas exerts pressure on the walls of the container.
 - (c) A wooden table should be called a solid.

20. A silver ornament of mass 'm' gram was polished with gold equivalent to 1% of the mass of silver. Calculate the ratio of the number of atoms of gold and silver in the ornament. 3

OR

Write the chemical formula of the following using the criss-cross method:

a. Ammonium sulphate b. Magnesium bicarbonate c. Calcium nitrate

21. Class teacher of Std IX found that during the month of October (after the monsoon season was over), Ram shivered badly at 11.00 am and then showed emergence of periodic high body temperature almost every day at the same time. 3

- a) Name the disease that has affected Ram according to you.
b) Name the Pathogen and the vector that is responsible for this disease.
c) Suggest two preventive measures to overcome such disease.

22. Differentiate between any two types of seed on the basis of cotyledons with the help of three points in a tabular form. 3

23. Write a brief note on Apiculture. 3

24. A ball is dropped from a height of 10 m. If the energy of the ball reduces by 40% after striking the ground, how much high can the ball bounce back? ($g = 10 \text{ m s}^{-2}$) 3

25. During arm wrestling, participants put their arms on the table, and wrestle with the palms. If the force exerted by both the players is equal, 3

- a) Where are balanced forces acting?
b) Where is the action reaction pair acting?

26. Derive third equation of motion. 3

SECTION C

27. Distinguish between true solution and colloid. (Any five points) 5

OR

- (a) What is an octet? How does an element reach an octet state?
(b) Draw a schematic atomic structure of magnesium and phosphorus (Number of protons of magnesium = 12, phosphorus = 15).

28. a) Why is Cambium said to be secondary in nature? 5
b) Draw the location and function of all meristematic tissue.

OR

- a) Name the tissue that lies between hypodermis and cortex in a t.s of dicot stem. What are they made up of?
b) Name the tissue that carries out the function of sieve tube. What is the function of sieve tube?
c) In a tabular form list down any two differences between various types of simple permanent tissue.
29. a) Which produces more severe burns boiling water or steam at 100°C? 5
b) Give two factors which increase the rate of evaporation.

OR

Why is temperature become constant at boiling point of liquid? What is meant by latent heat of vaporisation? Why is latent heat of vaporisation higher than latent heat of fusion?

30. a) Define the following term and give one example of organism showing it. 5
i) Pseudocoelom ii) Open circulatory system
ii) Radially symmetrical iv) Poikilothermic
b) Write down any two adaptive features of i) *Columba livia* ii) *Labeo rohita*
31. What is power? How do you differentiate kilowatt from kilowatt hour? The Jog Falls in Karnataka state are nearly 20 m high. 2000 tonnes of water falls from it in a minute. Calculate the equivalent power if all this energy can be utilized? ($g = 10 \text{ m s}^{-2}$) 5
32. a) State the Universal law of gravitation. Give its expression. 5
b) What is the S.I unit of universal constant of gravitation 'G'?
c) An object weights 15 N on earth. Calculate its weight on moon.

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