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SAMPLE PAPER 02 FOR SESSION ENDING EXAM (2019-20)

SUBJECT: SCIENCE **MAX. MARKS: 80**

CLASS: IX **DURATION: 3 HRS**

General Instructions:

I. The question paper comprises three sections - A, B and C. Attempt all the sections.

II. All questions are compulsory. Internal choice is given in each section.

III. 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.

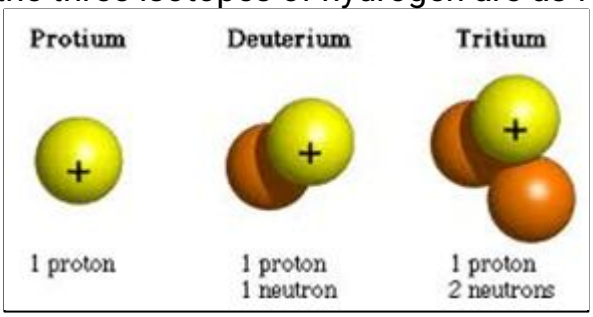
IV. All questions in Section B are three-mark, short-answer type questions. These are to be answered in about 50 - 60 words each.

V. All questions in Section C are five-mark, long-answer type questions. These are to be answered in about 80 – 90 words each.

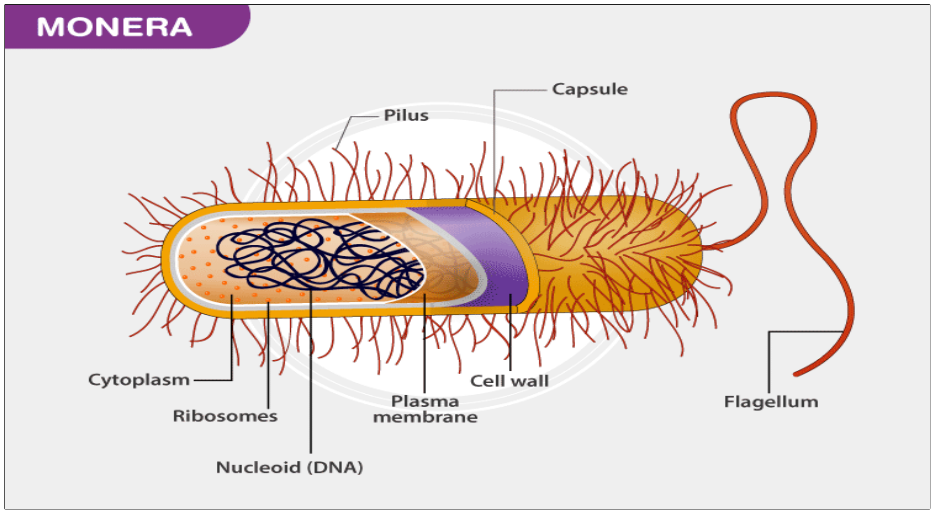
VI. This question paper consists of a total of 36 questions.

Section A

S.No.	QUESTIONS	MARKS
1.	"Action and reaction are equal and opposite but even then they do not cancel each other" the above statement is a. Partially false. b. False c. partially true d. true **OR** Rocket works on the principle of _____. a. Newton's third law b. Newton's second law c. Newton's fourth law d. Newton's first law	1
2.	To compare the pressure exerted by the solid iron cuboid, a student took two cuboids having the same dimension and same nature of material. After performing the experiment with both the cuboids, she found- a. $p_1 = 2p_2$ b. $p_2 = 3p_1$ c. $p_1 = p_2$ d. $p_2 = 2p_1$ **OR** In a watch P. E of wound spring is converted into a. Chemical energy b. Kinetic energy c. Mechanical energy	1

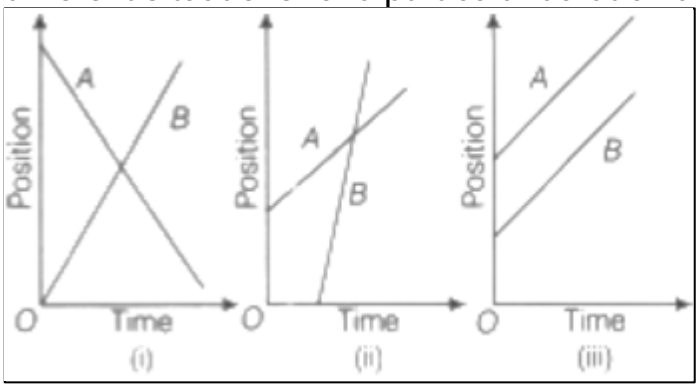
	d. Electrical energy	
3.	The frequency of sound is 100 Hz. How many times does it vibrate in a minute? a. 6000 Hz b. 600 Hz c. 5000 Hz d. 60 Hz	**1**
4.	Which one of the following is a leguminous green fodder commonly available in winter? a. Elephant grass b. Cowpea c. Rice and Jowar d. Berseen and lucerne	**1**
5..	What will be the boiling point of water at the top of a mountain where the atmospheric pressure is less than 1 atm? a. Less than 100^0C b. Exactly 373 K c. 100^0C d. More than 100^0C	**1**
6.	Which one of the following is not a viral disease? a. AIDS b. Typhoid c. Influenza d. Dengue	**1**
7.	The nuclei of the three isotopes of hydrogen are as follows:  Which of these three isotopes of hydrogen shown above is found in nature? a. Deuterium b. Protium c. Tritium d. Protium, Deuterium and Tritium **OR** Match the following with correct response. (1) Boiling point of water (2) Melting point of water (3) Boling point of Acetone (4) Melting point of Aluminium	**1**

	(A) 660˚C (B) 273K (C) 373K (D) 56˚C i. 1-B, 2-D, 3-A, 4-C ii. 1-D, 2-A, 3-C, 4-B iii. 1-C, 2-B, 3-D, 4-A iv. 1-A, 2-C, 3-B, 4-D	
8.	What is the maximum number of electrons which can be accommodated in 'N' shell?	**1**
9.	What is the atomicity of ammonia?	**1**
10.	**Answer question numbers 10.1-10.4 on the basis of your understanding the following paragraph and the related studied concepts.** **Cattle Breeding** Cross-breeding helps in the development of certain desired characteristics in animals like, Increased milk production, Resistance against diseases, Breeds that require less amount of quality feed. Exotic breed cattle (long lactation) are interbred with the locally bred cattle (high resistance to the diseases) to produce high quality bred that contain both the characteristics. In order to obtain a good quality of milk from the cattle, it is important to manage shelter, food, breeding and disease control of cattle. Cattle are prone to various internal and external parasites, bacteria and virus which are likely to affect their milk production. Animals that produce milk are called **milch animals** (the females of the herd). Animals that are used for carrying out agricultural work like tilling, carting etc. are called **draught animals** (males and the females that are poor in milk-yielding varieties). 	**4×1=4**

	Answer the following questions:- 10.1 What are milch animals? 10.2 What are the draught animals? 10.3 How does cross-breeding help in cattle breeding? 10.4 Mention the preconditions for a good yield of milk?	
11.	Calculate the mass percentage of oxygen present in the following compounds and state the law of chemical combination associated. Given, H=1, O=16. (i) Water (H_2O) and (ii) Hydrogen peroxide (H_2O_2) **OR** If K and L shells of an atom are full, then what would be the total number of electrons in the atom?	**1**
12.	**Answer question numbers 12.1-12.4 on the basis of your understanding the following paragraph and the related studied concepts.** Kingdom Monera belongs to the prokaryote family. The organisms belonging to this kingdom do not contain a true nucleus. These are the oldest known microorganisms on earth. Their DNA is not enclosed within the nucleus. They are unicellular organisms found mostly in a moist environment. They are found in hot springs, snow, deep oceans or as parasites in other organisms. The monerans do not possess any membrane-bound organelles.  **Answer the following questions:-** 12.1Why does the DNA of Monerans is not enclosed within the nucleus? 12.2 Why are they regarded as primitive organisms? 12.3 Where are they found commonly? 12.4 Give the unique characteristics of Monerans.	**4×1=4**

13.	**Assertion:** We feel cool when we touch a piece of ice. **Reason:** Our body temperature is higher than the temperature of ice. e. Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A). f. Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A). g. Assertion (A) is true but reason (R) is false. h. Assertion (A) is false but reason (R) is true.	1
14.	**Assertion:** Motion of satellites around their planets is considered as accelerated motion. **Reason:** During their motion, the speed remains constant, while the direction of motion changes continuously. i. Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A). j. Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A). k. Assertion (A) is true but reason (R) is false. l. Assertion (A) is false but reason (R) is true.	1
	Section B	
15.	If an electric iron of 1200 W is used for 30 minutes every day, find the electric energy consumed in the month of April.	3
16.	Where will you find more number of ribosomes-in cancer cells or in fat cells?	3
17.	Differentiate between voluntary and involuntary muscles. Give one example of each.	3
18.	Write the steps you would use for making tea. Use the words solution, solvent, solute, dissolve, soluble, insoluble, filtrate and residue.	3
19.	A solid weighs 15 gm in air and 13 gm when completely immersed in a liquid of relative density 0.8. Find i. the volume of solid ii. the relative density of solid.	3
20.	i. The circulation of carbon is important in nature. Give reasons for your answer. ii. Explain any two processes involved in the cycling of nitrogen in the environment. **OR** While driving in the countryside, Kapil saw square panels attached on the street lights along the road. He found out that these were photovoltaic solar panels which tapped solar energy	3

	and converted it to electrical energy to make the street lights function. He liked this idea so much that he got similar solar panels installed at his residence also. Answer the following questions based on the above information: i. In what respect is the installation of solar panels useful to Kapil? ii. Which values is Kapil promoting by installing solar panels? iii. How can Kapil promote similar values to others in the neighborhood?	
21.	How does the atmosphere act as a blanket?	**3**
22.	How do biotic and abiotic factors affect crop production?	**3**
23.	Complete the following table. **Element** / **Atomic Number** / **Protons** / **Element** / **Neutrons** / **Mass Number** A / 17 / / 17 / 18 / B / / 14 / 14 / 14 / C / / 9 / 9 / / 19	**3**
24.	Define- a. Draught breeds b. Dual purpose breeds c. Dairy breeds	**3**
	Section C	
25.	If Z = 3, what would be the valency of the element? Also, name the element. **OR** i. One mole of carbon atoms weighs 12 g. Find the mass of 1 atom of carbon in grams [Avogadro's number = 6.022×10^{23} per mole] ii. Calculate the mass of the following: a. 0.5 mole of N_2 gas b. 0.2 mole of O -atoms c. 4 moles of aluminium atom [Given, N = 14 u, O = 16 u, Al = 27 u, Avogadro's number = 6.022×10^{23} per mole]	**5**
26.	i. Write the formula to find the magnitude of the gravitational force between the earth and an object on the earth's surface. ii. Derive how does the value of gravitational force F between two objects change when a. distance between them is reduced to half and b. mass of an object is increased four times.	**5**
27.	A person is suffering from watery diarrhoea, effortless vomiting	**5**

	without nausea and loss of several litres of fluid takes place within hours. i. Name the disease and its causal organism. ii. Suggest some preventive measures to avoid this disease. iii. Can the spread of this disease be controlled? If yes, how? **OR** Give the point of differences between non-chordates and chordates.	
28.	i. Describe adipose tissue with the help of diagram. ii. How is adipose tissue different from blood tissue?	**5**
29.	The position-time graphs of two objects A and B in three different situations for a particular duration are shown as below:  i. In which situation the distance between them will remain same? ii. In which situation they are moving in opposite directions? iii. Is the velocity of object A positive or negative in situation (ii)?	**5**
30.	I. Distinguish among the true solution, suspension and colloid in a tabular form under the following heads: a. Stability b. Filterability c. Type of mixture II. Give the expression for the concentration of a solution. How will you prepare a 10% solution of glucose by mass in the water? **OR** Which separation techniques will you apply for the separation of the following? i. Sodium chloride from its solution in water. ii. Ammonium chloride from a mixture containing sodium chloride and ammonium chloride. iii. Small pieces of metal in the engine oil of a car. iv. Different pigments from an extract of flower petals. v. Butter from curd. vi. Oil from water.	**5**

	vii. Tea leaves from tea. viii. Iron pins from sand. ix. Wheat grains from husk. x. Fine mud particles suspended in water.	