

ATOMIC ENERGY CENTRAL SCHOOL NO. 3 RAWATBHATA
CONFIDENCE I (2020)

CLASS –IX
SUBJECT- SCIENCE

Time Allowed: 3 hours
Maximum Marks: 80

General Instructions:

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

Section A

1. If the K and L shells of an atom are full, then what would be the number of electrons in the atom? [1]
2. Define atomicity. [1]
3. Poultry is the rearing of domesticated fowl (chicken), ducks, geese, turkey and some varieties of pigeon for their meat and eggs. Poultry birds are of two types that is broilers and layers. One is specialized meat-producing poultry birds while other is egg-laying poultry birds. The tremendous rise in the availability of poultry products is called Silver Revolution. [4]

Poultry breeds	
Indigenous breeds.	Exotic breeds.
Assel, Bursa, and Kadaknath	White leghorn, Black Minorca, Rhode island red and Light Sussex

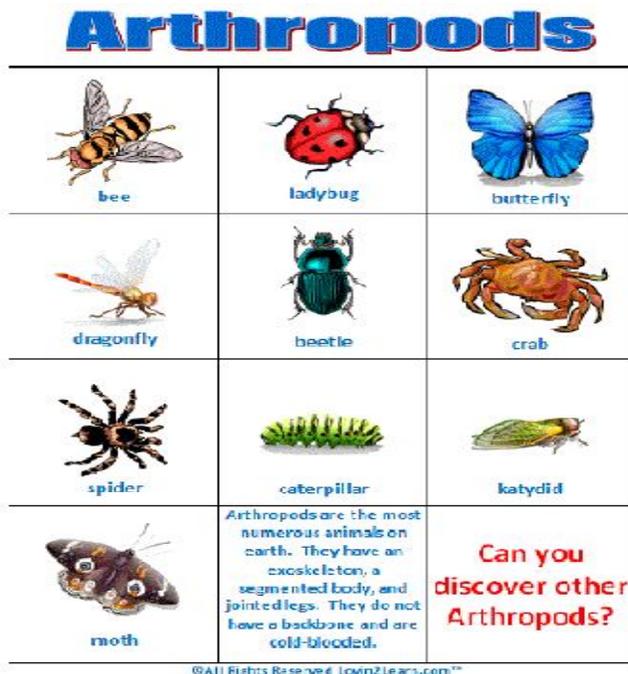
Egg and broiler production: Hens raised for egg production are called layers. Young birds are vaccinated. Their food should be rich in vitamins, minerals and macronutrients. They start laying eggs at the age of 5 months. The average egg production period in commercial layers is 500 days. Broilers are quick growing birds which are raised for 6-8 weeks. They attain the weight of 700g to 1.5kg. Their food is rich in vitamin A and K.



Answer the following questions:

- i. What are the layers?
 - ii. What are broilers?
 - iii. What is the silver revolution?
 - iv. Name two indigenous and exotic breeds of poultry birds.
4. Arthropod, any member of the phylum Arthropoda, the largest phylum in the animal kingdom, which includes such familiar forms as lobsters, crabs, spiders, mites, insects, centipedes, and millipedes. About 84% of all known species of animals are members of this phylum. Arthropods are represented in every habitat on Earth and show a great variety of adaptations. Several types live in the aquatic environment, and others reside in terrestrial ones; some groups are even adapted for flight. The distinguishing feature of arthropods is the presence of a jointed skeletal covering composed of chitin (a complex sugar) bound to protein. Arthropods lack locomotory cilia, even in the larval stages, probably because

of the presence of the exoskeleton. The body is usually segmented, and the segments bear paired, jointed appendages, from which the name arthropod (“jointed feet”) is derived. About one million arthropod species have been described, of which most are insects. [4]



Answer the following questions:

- i. What is the meaning of the word Arthropod?
 - ii. Give any five examples of phylum Arthropoda.
 - iii. Which is the largest phylum in the animal kingdom?
 - iv. Mention the habitat of arthropods.
5. Bags at the top of school van are tied using a string to avoid the effect of [1]
- a) inertia b) acceleration
 - c) force d) momentum

OR

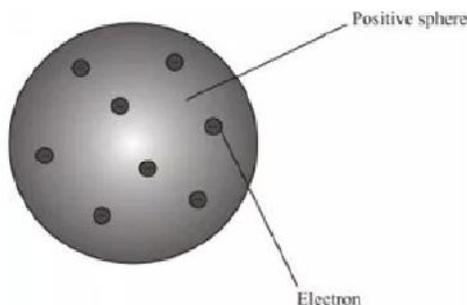
When no external force acts on an object, the physical quantity that remains conserved is

- a) force b) momentum
 - c) acceleration d) velocity
6. Kilowatt hour is a unit of _____ [1]
- a) mass b) power
 - c) energy d) joule
7. Two discs of the same radii and same mass are resting over one another co-axially on the sand. If one disc is removed gently, then the pressure exerted by the single disc will be [1]
- a) doubled b) remains same
 - c) half d) can't be predicted
8. The audible range of human ear is:- [1]
- a) 2 Hz – 2,000 Hz b) 2 Hz– 20 KHz
 - c) 20 Hz– 20 MHz d) 20 Hz – 20,000 Hz

OR

The earth is acted upon by gravitation of the sun, even though it does not fall into it. Why?

9. Which of the following type of irrigation system is used in areas closer to rivers ? [1]
- a) Dug wells b) Tanks
 - c) River lift d) Canals
10. The aqueous mixture of salt and sand can be separated by the following method [1]
- a) Sublimation b) Condensation
 - c) Melting d) Filtration
11. Which of the following is a chronic disease? [1]
- a) Asthma b) Cold
 - c) Diabetes d) Both Cold and Asthma
12. The following figure shows the atomic model of _____. [1]



- a) Rutherford b) J.J. Thomson
c) Chandwick d) Bohr's

OR

Which of the following factors are responsible for the change of state of solid CO₂ into vapours?

- a) Decrease in pressure b) Increase in temperature
c) Increase in pressure d) Both decrease in pressure and anincrease in temperature

13. **Assertion:** Gases are compressible but liquids are not.

Reason: Structure of gas and liquid are different.[1]

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

14. **Assertion:** Displacement of a body may be zero when the distance travelled by it is not zero.

Reason: The displacement is the longest distance between the initial and final position.[1]

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

15. What are the advantages of composite fish culture. [3]

16. Calculate the molar mass of (a) water (H₂O) (b) nitric acid (HNO₃). [3]

OR

For the symbol H, D and T, tabulate three sub-atomic particles found in each of them.

17. The speed of a vehicle of mass 500 kg increases from 36 km/h to 72 km/h. Calculate the increase in its kinetic energy.[3]

18. Raj is a farmer residing on the outskirts of Delhi. Upon a visit to a fertilizer shop, the salesman inquired of Raj of the crop he anticipated to cultivate in the coming season. During the conversation, the crop concerned was conveyed. The salesman suggested that urea and other nitrogenous fertilizer be used. Mukesh, quietly but keenly listening the conversation intervened and told Raj that for the concerned crop nitrogenous fertilizers shall not be required. Respond to the following questions using the information provided above: [3]

- What values are shown by Mukesh?
- What can be the concerned crop possibly?
- What can be the reason for Mukesh's suggestion?

OR

Raghu switched from traditional to modern farming practices in which he used large amounts of fertilisers and pesticides to gain an increase in profit.

- What are the adverse effects of modern farming?
- What is soil pollution?
- What do you think will be effect on the soil in long run?
- What alternative method could be more beneficial for farming?

19. Differentiate between plant cell and animal cell. [3]

20. How do cardiac muscles differ from both voluntary and involuntary muscles in both structure and function?[3]

21. How are a sol, a solution and a suspension different from each other? [3]

22. An object is thrown vertically upwards and rises to a height of 13.07 m. Calculate[3]

- the velocity with which the object was thrown upwards.
- the time taken by the object to reach the highest point.

23. Which would require a greater force,accelerating a 2 kg mass at 5 ms⁻² or a 4 kg mass at 2 ms⁻²?.[3]

24. i. State and define SI unit of power.

- A person carrying 10 bricks each of mass 2.5 kg on his head moves to a height 20 m in 50 s. Calculate power spent in carrying bricks of the person. (Given, g = 10 ms⁻²). [3]

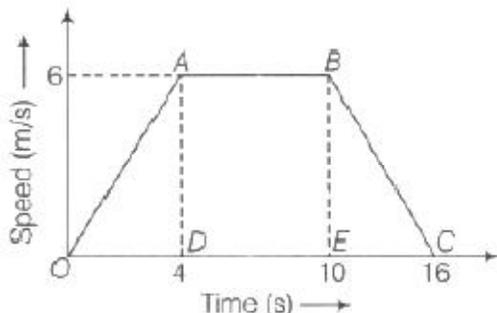
OR

Write any three uses of ultra sound.

25. i. Draw a neat and labelled diagram of the apparatus used to separate components of blueblack ink. [5]
Name the process and state the principle involved.
- ii. Identify, the physical and chemical changes from the following.
- Burning of magnesium in air.
 - Tarnishing of silver spoon.
 - Sublimation of iodine.
 - Electrolysis of water.

OR

- i. Under which category of mixtures will you classify alloys and why?
ii. Whether a solution is always liquid or not. Comment.
iii. Can a solution be heterogeneous?
26. Study the speed-time graph of a body given here and answer the following questions: [5]



- i. What type of motion is represented by OA?
ii. What type of motion is represented by AB?
iii. What type of motion is represented by BC?
iv. Find out the acceleration of the body.
v. Calculate the retardation of the body.
vi. Find out the distance travelled by the body from A to B.
27. Differentiate between bone and cartilage with respect to structure, function and location. [5]
28. Explain the following statements: [5]
- Being disease-free is not the same as being healthy.
 - Community health is essential for good individual health.
 - Villagers suffer from cholera more than urban people.

OR

Differentiate monocot and dicot plant.

29. Derive an expression for the force of attraction between two bodies and then define gravitational constant. [5]
30. A number of electrons, protons, and neutrons in chemical species A, B, C, and D are given below. [5]

Chemical species	Electrons	Protons	Neutrons
A	2	3	4
B	10	9	8
C	8	8	8
D	8	8	10

Now answer the following questions.

- What is the mass number of A and B?
- What is the atomic number of B?
- Which two chemical species represent a pair of isotopes and why?
- What is the valency of element C? Also, justify your answers.

OR

Fill in the missing data in the following table.

Species property	H ₂ O	CO ₂	Na atom	MgCl ₂
Number of moles	2	-	-	0.5
Number of particles	-	3.011×10^{23}	-	-
Mass	36 g	-	115 g	-