

KENDRIYA VIDYALAYA SANGATHAN

REGIONAL OFFICE VARANASI

SUMMATIVE ASSESSMENT II 2015-16

CLASS: IX

MAX. MARKS: 90

SUBJECT: SCIENCE

MAX. TIME: 3hrs

General instructions:

- (i) The question paper comprises two sections , A and B . You are to attempt both the sections.
- (ii) All questions are compulsory.
- (iii) There is no choice in any of the questions.
- (iv) All questions of section A and all questions of section B are to be attempted separately .
- (v) Question numbers 1 to 3 in section A are one mark questions. These are to be answered in one word or in one sentence.
- (vi) Question numbers 4 to 5 in section A are two marks questions. These are to be answered in about 30 words each.
- (vii) Question numbers 6 to 16 in section A are three marks questions. These are to be answered in about 50 words each.
- (viii) Question numbers 17 to 21 in section A are five marks questions. These are to be answered in about 70 words each.
- (ix) This section has 3 OTBA questions . Question number 22 is two marks, question number 23 is three marks and question number 24 is five marks question . These are to be answered based on the text given by the CBSE.
- (X) Question numbers 25 to 33 in Section B are multiple choice questions based on practical skills. Each question is one mark question . You are to select one most appropriate response out of the four provided to you .
- (xi) Question numbers 34 to 36 in Section B are two marks questions based on practical skills . These are to be answered in brief.

SECTION- A

1. Give an example where potential energy is acquired by the body due to change in its shape.
2. Why do isotopes of an element show similar properties?
3. Name the vector that transmits malaria causing microorganism from a patient to the host.
4. Find the relative density of an aluminium block of mass 108g having volume of 40cm^3 .

___(Density of water = 1g/cm^3)

5. Write the given statements in your answer-books after filling in the blanks :

(a) Snails and mussels have an external shell and belong to the phylum _____ .

(b) Non-motile animals having pores all over the body, commonly called sponges belong to phylum _____ .

6. (a) State the Law of Constant Proportions.

(b) In a compound Carbon and Oxygen react in a ratio 3:8 by mass to form carbon dioxide.

What mass of Oxygen is required to react completely with 9g of carbon?

7. (a) What are the conditions for work to be done?

(b) What is the work done by the force of gravity on a satellite moving round the earth?

Justify your answer.

8. Explain the basis for grouping living organisms into five kingdoms.

9. (a) What were the observations of Rutherford's alpha particles scattering experiment?

(b) Draw an atomic structure of the element having atomic number 17; showing distribution of electrons in various energy levels.

10. (a) What is Health?

(b) Differentiate between Acute diseases and Chronic diseases.

11. What is Binomial Nomenclature? Name the scientist who introduced it. What is its advantage?

12. (a) On which characteristics of sound wave do the following properties depend :
- (i) loudness
 - (ii) pitch
- (b) Calculate the frequency of a sound wave whose wavelength is 0.85m.
(Speed of sound = 340m/s)
- (c) Why is the sound of a vibrating pendulum inaudible to us?
13. (a) Name any two diseases that can be prevented by vaccination?
- (b) Name any two conditions necessary for good health.
- (c) Suggest two measures that the authorities should take to bring down the incidence of diseases in your neighbourhood.
14. (a) A battery lights a bulb. Show the energy changes involved in the process.
- (b) What is the commercial unit of energy? Express it in joules.
- (c) An electric bulb of 60W is used for 6h per day. Calculate the “ units” of energy consumed in one day.
15. Give reasons :
- (a) Why is it difficult to hold a school bag having a strap made of a thin and strong string?
 - (b) The cork floats while the nail sinks in water.
 - (c) Name the devices used for determining (i) density of a liquid.
(ii) Purity of milk sample.
16. Ruchika went to village to see her grandmother in her summer break. She wanted to help her grandmother in everyday work. The work assigned to her was to pull out water from the well. It was very exciting for her to draw water from the well. While drawing water she observed that the bucket of water was lighter in water and heavier when out of water. She somehow managed to pull it out of the well.
- (a) Name the force that acts on the bucket when it was in water.

(b) Why does the bucket appear heavier in air than in water?

(c) What values are reflected by Ruchika's conduct?

17. (a) Define the term 'kinetic energy' .

(b) Derive an expression for kinetic energy for an object of mass 'm' moving with velocity 'v'.

(c) A certain force acting on a 20kg mass changes its velocity from 5m/s to 2m/s. Calculate the work done by the force.

18. An element 'X' has 13 protons, 13 electrons and 14 neutrons. Answer the following

Questions :

(a) What is the atomic number of 'X' ?

(b) Identify the element?

(c) What is its valency ? What is the number of valence electrons in 'X' ?

(d) What is the type of ion formed by 'X' ? Why ?

(e) Name the scientist who discovered electrons and protons.

19. Differentiate (any one difference) :

(a) Cryptogams and Phanerogams .

(b) *Annelida* and *Arthropoda*.

(c) Amphibia and Reptilia.

(d) Aves and Mammals.

(e) Gymnosperms and Angiosperms.

20. (a) In which of the three media air, water or iron does sound travel the fastest at a particular temperature?

(b) Flash and thunder are produced simultaneously but thunder is heard a few seconds after the flash is seen . Why?

(c) What is reverberation?

(d) A submarine emits a sonar pulse which returns from an underwater cliff in 1.02s. If the speed of sound in salt water is 1531m/s, how far away is the cliff?

21. (a) Name the elements present in baking powder.

(b) Write the chemical formulae of :

(i) Aluminium sulphate

(ii) Sodium sulphide

(c) If one mole of nitrogen atoms weighs 14g, what is the mass (in gram) of one atom of Nitrogen?

(d) Calculate the number of moles in :

(i) 22g of CO₂ (Atomic mass of Carbon = 12u and Oxygen = 16u)

(ii) 12.044×10^{23} number of CO₂ molecules.