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RANCHI REGION

SESSION ENDING EXAMINATION 2018 - 19

CLASS - IX **MARKS : 80**

SUBJECT : SCIENCE **TIME : 3 HOURS**

General Instructions:-

i) The question paper comprises of five sections-A,B,C,D,E. You are to attempt all sections.

ii) All questions are compulsory.

iii) There is internal choice in three questions of Three marks each and three questions of Five marks each

iv) Question numbers 1 and 2 in Section A are one mark questions. These are to be answered in one word or in one sentence.

v) Question numbers 3,4 and 5 in Section B are two mark questions. These are to be answered in about 30 words each.

vi) Question numbers 6 to 15 in Section C are three mark questions.These are to be answered in about 50 words each.

vii) Question numbers 16-21 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 based on practical skills.Each question is a two marks question. These are to be answered in brief.

SECTION - A

1. Excessive use of fertilisers is not advisable. Why?

2.. Give a difference between acute and chronic disease.

SECTION - B

3. Thallophyta, Bryophyta and Pteridophyta are called "Cryptogams". Gymnosperms and Angiosperms are ca "Phanerogams". Why ?

4. State Newton´s second law of motion. From this law prove that F= ma.

5. A sound wave travels at a speed of 339 m s^{-1} .If it´s wavelength is 1.5 what is the frequency of the wave? V=22,600H

SECTION - C

6. Convert the following temperature to the celcius scale:

   a. 411 k 138 °c

   b. 362k 89

   c. 152k -121

7. Calculate the molar mass of the following

   a. Na_2SO_3 23x2 + 32 + 16x3 = 126

   b. HNO_3 1+14+48 = 63

8. Composition of the nuclei of two atomic species X and Y are given a under

Isotopes

	X	Y
Protons	6	6
Neutrons	6	8

Mass no.
12
14

Give the mass number of X and Y. What is the relation between the two species?

9. Explain in detail any three means by which infectious diseases are spread.

10. Derive the equation for velocity-time relation (V=u+at) by graphical method. ~~3.07 km/sec~~

Or

a. What is uniform circular motion?

b. An artificial satellite is moving in a circular orbit of radius 42250 km. Calculate its speed if it takes 24 hours to revolve around the earth. 3.07 km/sec

11. (a) What is the momentum of an object of mass m moving with velocity v? P = mv

(b) Explain why is it difficult for fireman to hold a hose which ejects large amount of water at a high velocity?

12. Consider the activities listed below. Reason out whether work is done or not ?

(i) A donkey is carrying a load on it´s back. NO

(ii) A wind-mill is lifting water from a well. W.D.

(iii) A green plant carrying out photosynthesis. NO

(iv) An engine pulling a train. W.D

(v) Food grains are getting dried in the sun. NO

(vi) A sailboat is moving due to wind energy W.D

13. Differenciate between the following:

a. Capture fishery and culture fishery

b. Mixed cropping and intercropping

c. Bee keeping and poultry farming

14. What is ozone?Give its importance and name the chemical which is damaging the ozone layer.

Or

Write a short note on how forests influence the quality of our air, soil and water resources.

15. Explain Nitrogen cycle with the help of a diagram.

SECTION D

16. (a) Define Power. Give it´s S.I unit. watt

(b) An electric bulb of 60W is used for 6 hours per day. Calculate the´ units´ of energy consumed by the bulb. E = P × t

E = 0.36

(OR)

(a) Define kinetic energy. Give it´s S.I unit. Joule

(b) An object of mass 15kg is moving with a uniform velocity 4 m s^{-1} . What is the kinetic energy possessed by the object?

K.E = ½ mV²

K.E = 120 J

17. (a) What is the difference between the mass and weight of an object?

(b) The mass of an object is 10 kg. What is it´s weight on the earth? What would be it´s mass and weight on the surface of moon? (take $g=9.8m/s^2$)

Earth, $w = mg$ Moon :- Same

$w = 98 N$ $w_{moon} = 98/6 N$

18. a. Define

i) Homogeneous mixture

ii) Solution

b. A solution contain 40 gm of common salt in 320 g of water. Calculate the concentration of solution in term of mass by mass percentage of the solution.

$\frac{40}{320+40} \times 100 = \frac{40}{360} \times 100 = 11.11$

19. Convert into moles:

a) 22g of Carbon-di-oxide

b) 20 g of Water

$CO_2 = 12 + 2 \times 16 = 44g$

No. of moles $= \frac{22}{44} = \frac{1}{2} = 0.5$

$H_2O = 2 \times 1 + 16 = 18$

No. of moles $= \frac{20}{18} = 1.11$

(OR)

Give the name of the elements present in the following compounds:

a) Quick Lime Ca & O

b) Baking Powder Na, H, C, O

C) Potassium Sulphate K, S, O

d) Hydrogen bromide H, Br

e) Slaked Lime Ca, O, H.

20. In brief state what happens when:

a. Raisins are left in pure water for some time.

b. Chloroplast is removed from plant cell

c. Lysosomes burst inside the cell

d. The plasma membrane of a cell breaks down

e. A red blood cell is kept in concentrated saline solution

21. a Differentiate between Parenchyma, Collenchyma and Sclerenchyma on the basis of their characteristics.

b. Give the function of

i) cork

ii) stomata

Or

a. Give difference between striated, unstraited and cardiac muscles on the basis of their structure and site/location in the body.

b. List the function of

i) blood

ii) bone

SECTION E

22. Write any two properties of solution.

23. Which separation techniques will you apply for the separation of the following:

a. Mixture of Ammonium Chloride and Sodium Chloride

b. Oil from water

24. A five rupee coin is placed on a stiff card covering an empty glass tumbler. When a sharp horizontal flick is given with a finger to the card; What will happen to the coin and why?

25.. While performing the experiment to study the laws of reflection of sound when is the sound distinctly and loudly audible?

26. Draw a labelled diagram of a neuron.

27. List two adaptive features of this organism which helps it to fly.