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Standard 10

SCIENCE

Time: 2.30 Hours

Marks: 75

Section - A

Answer all the 15 questions.

15×1=15

Choose the correct answer from the alternatives given in the brackets:

- Theory of natural selection was proposed by
(Charles Darwin, Hugo de vries, Gregor Johan Mendal, Jean Batise)
- Mano clonal anti bodies are now used for treatment of _____.
(Diabete, Cancer, Pernicious anaemia, Hepaitis)
- The most serious form of malaria is caused by plasmodium _____.
(Plamodium ovale, Plasmodium malarise, Plasmodium falciparum, Plasmodium vivax)
- Dementia, Dermatitis, Diarrhea are the symptoms of _____ disease.
(Pellagra, Rickrets, Marasmus, Scurvey)
- If a water soaked seed is pressed, a small drop of water comes out through.
(stomata, lenticel, micropyle, radicle)
- In bean, the embryo is enclosed by the _____.
(Seed coat, Redicle, Cotyledons, Endosperm)
- Example for fosil fuel is _____.
(copper, iron, magnesium, coal)
- The term global village was coined by _____.
(Marshell McLuhan, Drawin, Edward Jenner)
- When sunlight passes through window of the classrooms its path is visible. This is due to _____ of light.
(reflection, scattering, refraction, none of the above)
- In _____ process, solubillty decreases with increase in temperature.
(endothermic, exothermic)
- _____ is used in the production of ammonium nitrate which is used as fertilizer in agriculture.
(Sulphuric acid, Nitric acid, Acetic acid, Hydrochloric acid)
- The weight of 50kg person at the surface of the earth is _____.
(50N, 35N, 380N, 490N)
- Which is commonly used and allows for the lowest attainable temperature?
(Liquid helium, Liquid hydrogen, Hydrogen, Nitrogen)
- The potential difference required to pass a current 0.2A in a wire of resistance 200 ohms is _____.
(100V, 4V, 0.01V, 40V)
- The cells in which the electrical energy is derived from the chemical action are called _____ cell.
(Electrochemical, Electro physical, Secondary, Primary)

Section - B

Answer any 20 questions:

20×2=40

- Sequentially arrange the different species of man from primitive to modern man.
(Neanderthal man, Homo habilis, Homo eractus, Homo sapiens)
- Assertion (A) :** The Experiment of Mental considering the inheritance of a single trait is called monohybrid cross.
Reason (R) : Mental selected tall and Dwarf plants and allowed them to grow naturally.

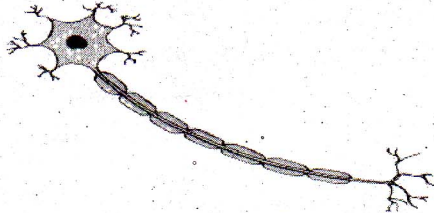
Choose the correct options given below:

- A-Correct, R-Correct
- A-Correct, R-Wrong
- A-Wrong, R-Correct
- A-Correct, R-Not relavant

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- 18) A list of disorders are given below. Pick out the odd one out and give the reasons.
(Colour blindness, Hemophilia, Night blindness, Albinism, Sickle cell anaemia)
- 19) **Match the following:**
 BCG - Triple antigen
 MMR - Double antigen
 DPT - Tuberculosis vaccine
 DT - Mumps, Measles and Rubella
- 20) **Copy the diagram and label any two parts in the group given:**
(Cytoplasm, Axon, Neurilemma, Nucleus, Dendrite)



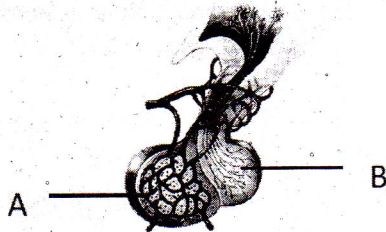
- 21) **Based on relationships fill in the blanks:**

- a) Thyroxin : Cretinism
 Insulin : _____
 b) Thymus gland : Thymosin
 Pineal gland : _____

- 22) **Match the following hormones with its functions:**

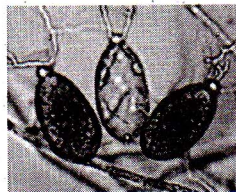
Hormones	Functions
Somatotropic hormone	Growth of mammary glands
Follicle stimulating hormone	discharge of Egg
Luteinizing hormone	forth growth in general
Lactogenic hormone	stimulates sperm formation

- 23) **Mark the parts A & B in the given diagram.**



- 24) **Spot the error and correct the sentence:**

- a) The ovule develops into fruit.
 b) Paddy is a simple indehiscent many seeded fruit known as caryopsis.
 25) The given figure denotes _____. Mention any one of its properties.



- 26) Study the food chain below. Correct it and convert it into a pyramid of energy.
 Mulberry → Sparrow → Catterpillar → Kite
- 27) a) Example for the product of green chemistry is _____.
 (Halogen flame retardants, Bio plastic)
 b) The _____ forms decomposers in the pond eco system.
 (Fungi, Bacteria)

- 28) Distinguish between the saturated and unsaturated solutions using the data given below at a temperature of 25°C.
- 16g NaCl in 100g water
 - 36g NaCl in 100g water (Note: Solubility of NaCl is 36g)
- 29) Find the concentration of the solution in terms of weight percent if 20g of common salt is dissolved in 100g of water.
- 30) **Assertion (A)** : Colloidal solution has the property of scattering of light.
Reason (R) : If light is passed through a colloidal solution the light is scattered by larger colloidal particles and the beam become visible.

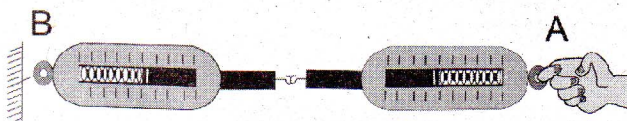
Choose the correct option:

- A-Correct, R-Correct
 - A-Correct, R-Wrong
 - A-Wrong, R-Correct
 - A-Correct, R-Not relevant
- 31) What is Brownian movement?
- 32) Gram molecular mass of oxygen is 32g. Density of oxygen is 1.429 g/cc. Find the Gram molecular volume of oxygen.
- 33) Distinguish between Isotopes and Isobars.
- 34) What type of chemical reaction takes place then,
 a) Limestone is heated b) A magnesium rippon is burnt in air
- 35) The pH values of certain familiar substances are given below:

Substance	pH Value
Blood	7.4
Backing soda	8.2
Vinegar	2.5
Household Ammonia	12

Analyse the data in the table, and answer the following questions.

- Which substance is acetic in nature?
 - Which substances are basic in nature?
- 36) a) The nature of the tooth paste commonly used is _____.
 (Acid / Base)
- b) When aqueous solution of silver nitrate and sodium chloride are mixed _____ precipitate is immediately formed.
 (Yellow / White)
- 37) From the following statements write down that which is not applicable to mass of an object.
- it is fundamental quantity
 - it is measured using physical balance
 - it is using spring balance
- 38) As a matter of convention, an anticlockwise movement is taken as _____ and a clockwise movement is taken as _____.
- 39) **Spot the error and correct the sentence:**
- Substituting the SI units, the unit of G is found to be Nm^2kg^2 .
 - Weight is the amount of matter present in a body.
- 40) **See the diagram and answer the following questions:**



- The force of Balance A exerts on Balance B is called _____.
- The force of Balance B on Balance A is called _____.

41) **Fill in the blanks:**

- a) Potential difference : Voltmeter, then ; Current : _____
 b) Power plant : Conventional source of energy, then Solar energy : _____.

42) **Spot the error and correct the sentence:**

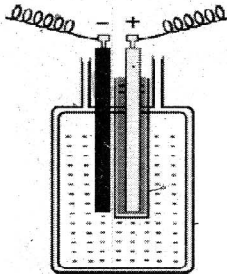
- a) A good source of energy would be one which would do a small amount of work per unit volume of mass.
 b) Any source of energy we used to do work is consumed and can be used again.

43) **Match the following:**

- a) Electric current - Coulomb
 b) Electric charge - Ampere
 c) Electric power - Ohm
 d) Resistance - Watt

44) **Redraw the given diagram and label any four parts given below:**

(Carbon rod, Zinc rod, Glass vessel, Ammonium chloride solution, Mixture of carbon & magnesium di oxide)

45) **Assertion (A) :** Earthing is important.

Reason (R) : The Electric press, Toaster, Table fan, Refrigerator is connected to the earth wire. Which provides a low-resistance = ce conducting path for the current. It ensures that any leakage of current to the metallic body of the appliance keep its potential to that of the earth, and the user may not get a sever electric shock.

Choose the correct option:

- a) A-Correct, R-Correct b) A-Correct, R-Wrong
 c) A-Wrong, R-Correct d) A-Correct, R-Not relevant

Section - C

Answer one question from each part:

4×5=20

Part - I

- 46) List out the several application of Bio Technology.
 47) What are the tests to identifying and confirmation of the HIV VIRUS? Give their preventions.

Part - II

- 48) a) Write down the two events involved in the sexual reproduction of flowering plant.
 b) Discuss the first event and write the types.
 49) a) What are the basic principles of Green Chemistry?
 b) List out the products produced by the process of Green Chemistry.

Part - III

- 50) State the findings of modern atomic theory.
 51) State the Avogadro's Law. List out any three of its applications.

Part - IV

- 52) a) Space stations are used to study the effects of long space flight on human body - Justify.
 b) $F = GM_1M_2/d^2$ is the mathematical form of Newton's Law of Gravitation. Then give the Statement of Newton's Law of Gravitation.
 53) Chandrayaan - I is a moon traveller. List out the achievements of Chandrayaan - I.
