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Time Allowed: 2.30 Hrs.

- Instructions: 1) Check the question paper for fairness of printing. If there is any lack of fairness, inform the Hall Supervisor immediately.
2) Use Blue or Black ink to write and underline and pencil to draw diagrams.

Section - I

Note : i) Answer all the 15 questions. ii) Choose the correct answer from the alternatives given in the brackets.

15x1=15

- Primitive man evolved in _____.
a) Africa b) America c) Australia d) India
- Polio is _____ Disease.
a) bacteria b) malaria c) virus d) fungi
- An endocrine gland found in the neck is _____.
a) adrenal gland b) pituitary gland c) thyroid gland d) pancreas
- The flower is important to a plant because it helps in _____.
a) attracting b) production of pector c) pollination d) sexual reproduction
- The tusks of elephants are modified _____.
a) incisors b) premolars c) molars d) canines
- The Xylem in the plants is responsible for _____.
a) transport of water b) transport of food c) transport of amino acid d) transport of oxygen
- Expand CFL :
a) Carbon Fluoride Lamp b) Compact Fluorescent Light
c) Candescent Fluorescent Lamp d) Compact Fluoride Lamp
- The mixture of gases used by deep-sea divers is _____.
a) helium-oxygen b) oxygen-nitrogen c) helium-nitrogen d) oxygen-hydrogen
- Vinegar is present in acetic acid. Curd contains _____ acid.
a) tartaric acid b) lactic acid c) citric acid d) oxalic acid
- Which alloy of iron is used in the production of home made utensils?
a) nickel steel b) stainless steel c) pig iron d) wrought iron
- The formula of methane is CH_4 and its succeeding member ethane is expressed as C_2H_6 . The common difference of succession between them is _____.
a) CH_2 b) C_2H_2 c) C_2H_3 d) C_2H_4
- In a screw gauge, if the zero of the lead scale lies below the pitch scale axis, the zero error is _____.
a) positive b) negative c) zero d) one
- The physical quantity which is equal to the rate of change of momentum is _____.
a) displacement b) acceleration c) force d) impulse
- What is the fuel used in thermal power plant?
a) fossil fuel b) petroleum c) bio-mass d) coal
- Which part of the human eye helps in changing the focal length of the eye lens _____.
a) crystalline lens b) retina c) iris d) cornea

Section - II

20x2 = 40

Note : Answer any 20 questions:

16. Match the following by identifying the pair:

- | | |
|--------------------------|----------------|
| a) Vaccine | - Organic acid |
| b) Natural gas | - Microbes |
| c) Citric acid | - Medicines |
| d) Monoclonal antibodies | - Fuel |
| e) Vitamins | - Metabolism |
| | - Enzymes |

17. What do you mean by phenotype and genotype of an individual? Explain.

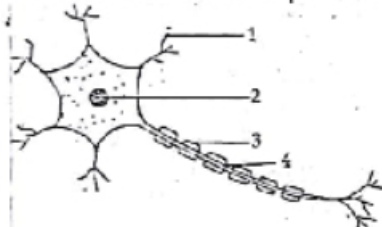
18. Fill in the blanks:

- a) _____ is derived from amyloproteins of bacteria.
- b) Insulin dependent diabetes is caused by the degeneration of beta cells of _____ due to a defective gene.
- i) liver ii) pancreas iii) spleen iv) gall bladder

19. What is triple antigen? Name the three disease which can be prevented by using it.

20. Identify the given

diagram and label the parts.



21. Coconut seeds are dispersed by Hydrochory (dispersal by water). Mention the part of the fruit whose modification help in this mechanism.

22. Mention the adaptations found in the following Mammals :

- | | |
|---|---|
| Whales | - |
| Polar Bear | - |
| Kangaroo | - |
| Herbivorous Mammals | - |
| (Abdominal pouch, Cellulose, Limbs, Thick skin) | |

23. Which blood cells are without nuclei? What is the advantage of this condition?

24. The Master Chemists of our body are the Kidney. Justify.

- a) Kidneys filter the chemicals in the body
- b) Kidneys maintain the chemical composition of blood
- c) Kidneys eliminate all chemicals absorbed by the body
- d) Kidneys store the chemicals accumulated in the body.

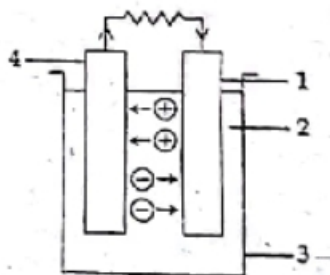
25. a) Normally in a healthy adult the initial filtrate of blood in the Kidneys is about _____ litres daily. b) The volume actually excreted is only _____ litres per day.

26. a) When air is blown from mouth into a test tube containing lime water the lime water turns milky due to _____.

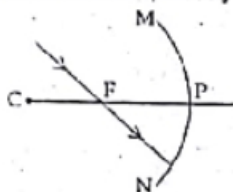
- i) oxygen ii) carbon di-oxide iii) nitrogen iv) water vapour

- b) During respiration exchange of gases takes place in _____.
- i) trachea ii) alveoli iii) throat iv) larynx
27. Describe the change that occurs in a touch me not plant when it is touched?
28. What will happen if all the grass is removed from the grass land ecosystem?
29. a) Which fuel is used in the production of fertilizers?
b) What is natural gas made up of?
30. Write a short note on Bioremediation in Sewage Treatment.
31. Why do we say that wind energy is better than solar energy and atomic energy?
32. Give the dispersed phase and the dispersion medium in each of the following:
a) cheese b) soda water c) smoke d) sugar solution
33. Differentiate true solution and colloidal solution.
34. Gram molecular mass of oxygen is 32 g. Density of Oxygen is 1.429 g/litre. Find the gram molar volume of oxygen.
35. Why does the colour of copper sulphate change when an iron nail is kept in it? Justify.
36. Suggest a reason for each observation given below:
a) In fireworks powdered magnesium is used rather than magnesium ribbon.
b) Zinc and dilute H_2SO_4 react much more quickly when a few drops of copper sulphate solution are added.
37. Write the two uses of iron.
38. Assertion : A greenish layer appears on Copper Vessels if left uncleaned give the correct option.
a) Assertion and reason are correct and relevant to each other.
b) Assertion is true but reason is not relevant to each other.
39. a) Why is graphite used in electrical circuits?
b) Name the force that accounts for the softness of graphite.
40. A shopping Cart has a mass of 65 kg. In order to accelerate the Cart by 0.3 ms^{-2} , what force would you exert on it?
41. As a matter of convention, an anti-clockwise moment is taken as _____ and a clockwise moment is taken as _____.
42. Match the following:
- | | |
|-------------------------|--------------|
| a) Electric current | i) Volt |
| b) Potential difference | ii) Ohm |
| c) Resistor | iii) Coloumb |
| d) Electric charge | iv) Ampere |

43. Redraw the diagram and label the parts.



44. What measures would you suggest to minimize environmental pollution caused by burning of fossil fuel?
45. We see rainbow in the sky sometimes after the rain.
- What is spectrum?
 - Write the sequence of colours in a spectrum.
46. Light seems to travel along straight line paths in a transparent medium.
- What happens when light enters from one transparent medium to another?
 - Does it still move along a straight line path or change its direction?
47. The ray diagram shown below is introduced to show how a concave mirrors forms the image of an object.
- Identify the error and draw the correct ray diagram.



- Write the justifications for your corrections.

Section - III

Note : Answer all the questions:

4 x 5 = 20

48. 15th October is observed as World's Hand Washing Day.
- Tell your friend the effects of hand washing.
 - How frequently do you wash your hands everyday and when? (or)
49. List out the various parts of the human brain and write a note on their functions.
50. How does asexual reproduction takes place? Explain its types. (or)
51. a) Mankind is greatly influenced by the harmful effects of ecosystem. Give reason.
b) Study the food chain below and correct it.
- Grass → Frog → Grasshopper → Eagle → Snake
 - Fish → Algae → Small animals → Big fish
- c) Who coined the term "Global Village"?
52. Define Isotopes.
List out the applications of Avagadro's law. (or)
53. Homologous series predict the properties of the members of the series. Justify this statement through its characteristics.
54. Chandrayan I achieved 95% of its planned objectives. Justify it. (or)
55. An object 5 cm tall is placed at a distance of 10 cm from a concave mirror of radius of curvature 30 cm.
- Find the nature, position and size of the image.
 - Draw the ray diagram to represent the above case.