

SCIENCE (2 MARK QUESTIONS)

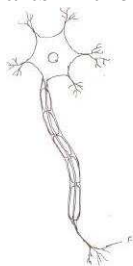
BIOLOGY

- Mendel has observed tallness as dominant character in garden pea plant. Similarly tongue rolling is a dominant character in man. In a group of 60 students, 45 can roll their tongue and 15 are non rollers.
 - In the above context, calculate the percentage of dominant and recession characters.
 - In garden pea plant, draw the diagrammatic representation of mono hybrid cross as explained by Mandel.
- Sexually reproducing organisms produce offsprings with marked, significant and visible variation. Asexually reproducing offsprings show minor variations.
 - Do you agree with the above statements?
 - Among the following organisms, list out the asexually reproducing organisms.
(Paramecium, Euglena, Earthworm and Bird)
- Sequentially arrange the different species of man from primitive to modern man.
(Neanderthal man, Homo habilis, Homo erectus, Homo sapiens)
- Identical twins are syngenic with similar chromosomal contents. Natural clones are those who possess identical chromosomes. Fill up with the suitable word given in the bracket:
 - Identical twins are _____ (Natural clones / Induced clones)
 - Identical twins are _____ (Dissimilar to each other / Similar to each other)
- Marasmus and kwashiorkor are both protein deficiency defects. Marasmus differs from kwashiorkor in enlarged belly and swelling in the face. Are these symptoms for the above diseases correct? If not, correct it.
- Ramya is suffering from bleeding gum and loosening teeth. On a diagnosis, it was found to have been caused by vitamin deficiency. Suggest Ramya the kind of vitamin that is lacking in her food and tell your friend the name of deficiency disease that she suffers from:
- Vitamins, deficiency diseases and symptoms are given. Match B, C with A

A – Vitamins	B – Deficiency diseases	C – Symptoms
Eg: Vitamin A	Nyctalopia	Night Blindness
Vitamin B1	Scurvy	Nervous disorders
Vitamin C	Rickets	Bleeding gum
Vitamin D	Haemorrhage; flaking of bones	Defective calcium
Vitamin K	Beri Beri	Profuse loss of blood

- Kavitha is suffering from common cold. What are the questions you put forth to Kavitha to confirm the disease?
 - _____?
 - _____?

9. Copy the diagram and label any two parts in the group given:



Cyton, Axon, Dendron, End plate

10. Draw the diagram of human brain and label the following parts.

a) Sense of smell b) Sense of vision

11. On the basis of the function performed, pick out the right statements.

a) Pituitary gland secretes hormones and enzymes.
b) Thyroid gland secretes thyroxine and insulin.
c) Testes produces sperms and the hormone androgen.
d) Pancreas produces enzymes and hormones.

12. Correct the statement, if they are wrong:

a) Alpha cells produce insulin and beta cells produce glucagon.
b) Cortisone suppresses the immune response.
c) Thymus gland is a lymphoid mass.
d) Ovary produces eggs and androgen.

13. Pick out the item which has sequential arrangements:

a) Zygotene → Leptotene → Pachytene → Diplotene → Diakinesis
b) Diakinesis → Zygotene → Leptotene → Pachytene → Diplotene
c) Leptotene → Zygotene → Pachytene → Diplotene → Diakinesis

14. The methods of reproduction and the organisms are given below. Match the type of reproduction to the suitable organisms:

Fission	Spirogyra	Yeast
Budding	Protozoan	Flatworms
Fragmentation	Bryophyllum	Bacteria

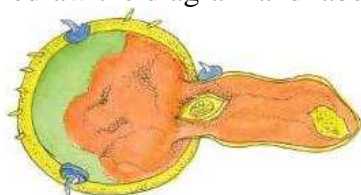
15. In balsam plant, the seed fall off far away from the mother plant.

a) Is this statement, correct or incorrect?
b) Give reason.

16. Composite fruit is formed by all the flowers of _____; _____ fruit is developed from a single flower with multicarpellary apocarpous superios ovary.

17. Redraw the diagram and label the following parts. a) Exine

b) Tube nucleus



18. One of the following groups contains a non mammalian animal. Pickup the group.

- a) Dolphin, Walrus, Porcupine, Rabbit, Bat
- b) Elephant, Pig, Horse, Donkey, Monkey
- c) Antelope, Deer, Cow, Buffalo, Black buck
- d) Dog, Cat, Crocodile, Lion, Tiger

19. The epidermis of mammals contains

- a) Hair, Quills, Bristle
- b) Hair, Nail, Claw
- c) Hair, Bristle, Horn
- d) Hair, Nail, Scale

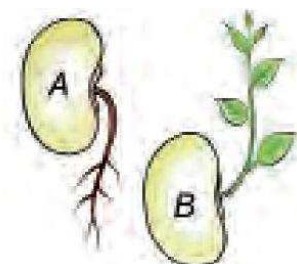
20. Based on the relationship fill up: Whale: Baleen plats; Bat: _____

21. Fill in the blanks: Plasma: Fibrinogen: RBC; Carrier of oxygen: WBC: _____

22. Master chemists of over body are kidneys – Justify.

- a) Kidneys acquire all chemicals taken in the body.
- b) Maintain the chemical composition of blood.
- c) Kidneys send out all chemicals taken in the body.
- d) Kidneys store the various chemicals taken in the body.

23. Observe the diagram:



- a) Mention the type of movements shown in figure A and B.
- b) How does the movement of mimosa.

24. Match the method nutrition of special organs with suitable examples:

Autotrophs	Mycorrhiza	Cuscutta
Parasites	Chlorophyll	Manotropa
Saprophytes	Haustoria	Hibiscus

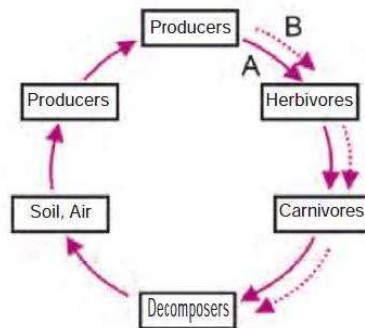
25. Sugar is converted into alcohol. From the above statement what kind of process takes place?
Which micro organism is involved?

26. In human beings, air enters into the body through _____ and move into _____. In fishes, water enters into the body through _____ and dissolved oxygen of water diffuses into _____

27. Study the food chain below: Correct it and convert into a pyramid of energy.
Mulberry → Sparrow → Caterpillar → Kite

28. Study the food chain. Paddy → Mouse → Snake → kite

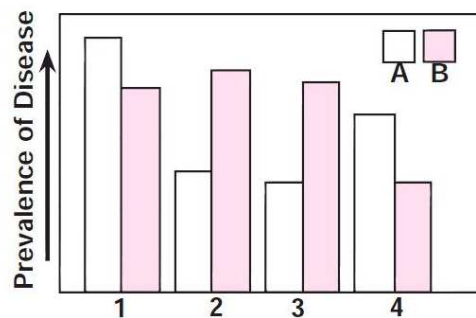
If the producer has a stored up energy of 500 k cal, how much of it goes to the organism at the third trophic level?



- Which line (A or B) represent the flow of energy? Why do you say so?
- Give an example of a decomposer.

29. The bar graph indicates the presence of the infectious diseases in two cities A and B. Observe it and answer the questions given below:

Dengue fever, Rat fever, Cholera, Chikungunya



- What may be the reason for the disease in the city A?
 - Which city needs more careful waste disposal and cleaning?
 - How can the disease be controlled in city A?
30. The pie diagram represents a survey result of infectious disease of a village during 2008-2009. Analyse it and answer the following chart.



Which diseases affect the majority of the population?

- How are these diseases transmitted?
- Write any three measures to control the other two diseases.

31. Odd one out

- a) Bio alcohol, green diesel, bio-ethers, petroleum
 - b) Cholera, typhoid, scabies, dysentery
32. A non-renewable resource is a natural resource if it is replaced by natural process at a rate comparable or faster than its rate of consumption by humans. Read this statement and confirm whether it is correct or incorrect. IF it is incorrect, give correct statement.
33. Pick out the suitable appliances to conserve the electric energy.
Florescent bulbs, Copper choke, Solar water heater, Electric water heater, Tungsten bulbs, Electronic choke.

CHEMISTRY

34. Distinguish between the saturated and unsaturated solution using the data given below at a temperature of 25C
- a) 16g NaCl in 100g water
 - b) 36g NaCl in 100g water
35. You have prepared a saturated solution of sugar. Is it possible to dissolve some more gram of sugar to this solution? Justify your stand.
36. Find the concentration of solution in terms of weight percent if 20gram of common salt is Dissolved in 50 gram of water.
37. Modern atomic theory takes up the wave concept, principle of uncertainty and other latest Discoveries to give a clear cut picture about an atom. State the findings of modern atomic theory.
38. You are given the values of mass of one volume of oxygen gas and the mass of one volume of hydrogen. By applying avagadro's law, how will you establish the relation between vapour density and molecular mass of a gas?
39. Calculate the number of moles in
- a) 12.046×10^{23} atoms of copper
 - b) 27.95g of Iron
 - c) 1.51×10^{23} molecules of CO_2
40. What types of chemical reaction takes place when
- a) limestone is heated
 - b) magnesium ribbon is burnt in air
41. The pH values of certain familiar substances are given below:

Substance	pH value
Blood	7.4
Baking soda	8.2
Vinegar	2.5
House hold ammonia	12

Analyse the data in the table and aswer the following questions:

a) Which substance is acidic in nature?

- b) Which substances are basic in nature?
42. Why does the colour of copper sulphate change when an iron nail is kept in it? Justify your answer.
43. The hydroxyl ion concentration of a solution is 1.0×10^{-8} M. What is the pH of the solution?
44. Assertion: Greenish layer appears on copper vessels if left uncleaned.
Reason: It is due to the formation of layer of basic copper carbonate.
Give your correct option:
a) assertion and reason are correct and relevant to each other.
b) assertion is true but reason is not relevant to the assertion.
45. Coating the surface of iron with other metals prevents it from rusting. If it is coated with thin layer of zinc it is called _____ (Galvanization, Painting, Cathodic protection)
46. Any metal mixed with mercury is called amalgam. The amalgam used for dental filling is _____ (Ag - Sn amalgam / Cu - Sn amalgam)
47. Assertion: In thermite welding, aluminium powder and Fe_2O_3 are used.
Reason: Aluminium powder is a strong reducing agent.
Does the reason satisfy the assertion?
48. Write down the possible isomers and give their IUPAC names using the formula C_4H_{10}
49. Diamond is the hardest allotrope of carbon. Give reason for its hardness.
50. An organic compound (A) is widely used as a preservative in pickles and has a molecular Formula $\text{C}_2\text{H}_4\text{O}_2$. This compound reacts with ethanol to form a sweet smelling compound (B)
a) Identify the compound A and B
b) Name the process and write the corresponding chemical equation.
51. An organic compound (A) of molecular formula $\text{C}_2\text{H}_6\text{O}$ on oxidation with alkaline KMnO_4 solution gives an acid (B) with the same number of carbon atoms. Compound A is used as an antiseptic to sterilize wounds in hospitals. Identify A and B. Write the chemical equation involved in the formation of B from A.

PHYSICS

52. The name some organisations which are associated with Chandrayan – 1 mission are given below. But some of them are not. List the wrong one.
(ISRO, BARC, NASA, ESA, WHO, ONGC)
53. Correct the mistakes, if any in the following statements:
a) One Newton is the force that produces an acceleration of 1 ms^{-2} in an object of 1 gram mass.
b) Action and reaction is always acting on the same body.
54. The important use of cryogenics is cryogenic fuels. What do you mean by cryogenic fuels?
55. From the following statements write down that which does not represent ohm's law:
a) Current / Potential difference = constant b) Potential difference / current = constant

c) Current = resistance * potential difference

56. Fill in the blanks:

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

57. In the list of sources of energy given below, some of them are wrong. List out the wrong ones (wind energy, solar energy, hydro electric power, nuclear energy, tidal energy, wave energy, geothermal energy)

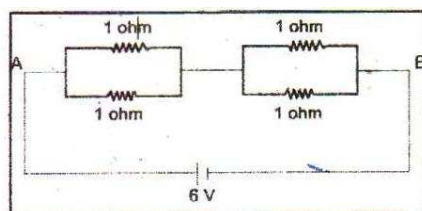
58. The schematic diagram in which different components of the circuit are represented by the Symbols conventionally used is called a circuit diagram. What do you mean by the term components?

59. We know that Gamma Rays are harmful radiations emitted by natural radio active substances.

- a) Which are other radiations from such substances?
- b) Tabulate the following statements as applicable to each of the above radiations.

60. Fuse wire is made up of an alloy of _____ which has high resistance and _____

61. Observe the circuit given below and find the resistance across AB.



62. From the following statements, write down that which is applicable to a commutator.

- a) Galvanometer uses commutator for deadbeat
- b) Transformer uses commutator to setup voltage
- c) Motor uses commutator to reverse the current

63. Fill in the blank:

- a) For a motor: a permanent magnet, then commercial motor: _____
- b) Focal length of a lens: meter , then for power of a lens _____

64. Correct the mistakes, if any in the following statements:

- a) Magnetic field is a quality that has magnitude only
- b) The magnetic field lines emerge from the south pole and merge at the north pole.

65. In traffic signals, _____ colour light is used to stop vehicles because it is having _____ wave length.

66. Considering this, write down the names of the parts in human eye.

- a) Dark muscular diaphragm that controls the pupil.
- b) The screen at where the image is formed by eye lens.

67. You know that myopia is a common refractive defect of vision. Person with this defect can see nearby objects clearly. Using concave lens of suitable power this defect is corrected.

- a) Mention other two types of defects like this
- b) Explain how can we correct it.