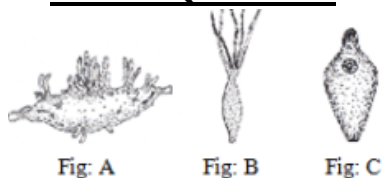


Chapter-1: Classification of Animal Kingdom

Read the chapter properly & write down the answer of following creative questions:

❖ **Creative Question-1:**



- a) What is classification? 1
- b) What do you mean by binomial nomenclature? 2
- c) Which phylum does the animal of Fig: A belong to? Explain. 3
- d) Are the animals of Fig: B and Fig: C in the stem in same phylum? Give your logic. 4

❖ **Creative Question-2**

A	B	C
Round worm	Earth worm	Cockroach

- a) What is nephridia? 1
- b) Why is cnidoblast a specially characterized cell of 'A'? 2
- c) Explain the characteristics of the animal of 'A'. 3
- d) Why do the animals of 'B' and 'C' belong to different groups? Explain with logic. 4

❖ **Creative Question-3:**



- a) What is coelenteron? 1
- b) Why is Arthropoda called the largest phylum? 2
- c) In which phylum does the animal of Fig: X belong to? 3
- d) Why is the animal of Fig: Y different from the animal of Fig: X? Analyze. 4

❖ **Creative Question-4:**

P	True jaw absent
Q	Skin covered with placoid scale
R	Skin covered with ganoid scale

- a) What is haemocoel? 1
- b) What is meant by notochord? 2
- c) Explain the characteristics of class 'P'. 3
- d) Animals of 'Q' and 'R' are in the same phylum but there are many differences between them.—Analyze. 4

❖ **Creative Question-5:**



- a) What is flame cell? 1
- b) Why is tiger mammal? 2
- c) Explain the characteristics of class that mentions the cold-blooded animal in the stem. 3
- d) Do the animals 'A' and 'B' belong to the same class? Give your opinion with logic. 4

[N. B:— All the writings will be in a new copy (Khata).]

Multiple Choice Questions
Chapter One
Classification of Animal Kingdom

Name: **Date:**

Class: VIII

Subject: Science

1. How many species of animals have been discovered so far?
 a) 1.2 million b) 1.3 million
 c) 1.5 million d) 1.6 billion
 2. The basis of classification of animals are—
 i. their interrelationship
 ii. morphological characteristics
 iii. similarity and dissimilarity among them
 Which one of the following is correct?
 a) i and ii b) i and iii
 c) ii and iii d) i, ii and iii
 3. What is known as the step-wise grouping of the living world?
 a) Division b) Taxonomy
 c) Classification d) Identification
 4. What is the lowest rank of the taxonomic unit?
 a) Genus b) Family
 c) Phylum d) Species
 5. The notable names in the history of classification are—
 i. Aristotle
 ii. John Ray
 iii. Carolus Linnaeus
 Which one of the following is correct?
 a) i and ii b) i and iii
 c) ii and iii d) i, ii and iii
 6. Who is called the father of taxonomy?
 a) Mendel b) Aristotle
 c) John Ray d) Carolus Linnaeus
 7. Who introduced binomial nomenclature?
 a) Darwin b) Aristotle
 c) John Ray d) Carolus Linnaeus
 8. Who defined genus and species in the naming of animals?
 a) Darwin b) Aristotle
 c) John Ray d) Carolus Linnaeus
 9. What is the scientific name of man?
 a) *Homo spein* b) *Homo sapins*
 c) *Homo cepiens* d) *Homo sapiens*
 10. In which language must scientific name be?
 a) Latin b) Greek
 c) Hebrew d) Spanish
 11. What is the rank of Protozoa in the modern classification system?
 a) Division b) Kingdom
 c) Sub-kingdom d) Super-kingdom
 12. How many phyla is the Kingdom-Animalia divided into?
 a) 7 b) 8
 c) 9 d) 10
 13. How many phyla do the invertebrate animals belong to?
 a) 7 b) 8
 c) 9 d) 10
 14. What is the name of the phylum of vertebrate animals?
 a) Mollusca b) Chordata
 c) Arthropoda d) Echinodermata
- Basis on the chart below, answer the question nos. 15 and 16.
- | | |
|---|---------------------------------------|
| P | Body wall without lining |
| Q | Body is covered with cuticle |
| R | Flame cell acts as excretory organ |
| S | Body consists of two embryonic layers |
15. In which group does Filaria worm fall?
 a) P b) Q
 c) R d) S
 16. Animals of same character are—
 i. Q
 ii. R
 iii. S
 Which one of the following is correct?
 a) i and ii b) i and iii
 c) ii and iii d) i, ii and iii
 17. In which animal is coelenteron found?
 a) Leech b) *Obelia*
 c) *Ascidia* d) *Spongilla*
 18. Which one is the characteristic of Cnidarian?
 a) Ectoderm bears cnidoblast
 b) Body wall has numerous pores
 c) Suckers and hooks in the body
 d) Having excretory system called nephridia
 19. Which animal does belong to Arthropoda?
 a) Snail b) Crab
 c) Leech d) Starfish
 20. Which phylum does *Scypha* belong to?
 a) Porifera b) Cnidaria
 c) Nematoda d) Platyhelminthes
 21. The animals of which phylum are known as sponge?
 a) Porifera b) Cnidaria
 c) Annelida d) Nematoda
 22. *Spongilla/ Scypha*—



- i. simplest multi-cellular animal
ii. having body wall with numerous pores
iii. having no compact tissue, organ and organ system
- Which one of the following is correct?
a) i and ii b) i and iii
c) ii and iii d) i, ii and iii
23. Which phylum is previously known as Coelenterata?
a) Porifera b) Cnidaria
c) Nematoda d) Echinodermata
24. Characteristics of *Hydra/Obelia*—
i. body cavity is known as coelenteron
ii. having body consisting of two embryonic layers
iii. ectoderm bears a special type of cells called cnidoblast
- Which one of the following is correct?
a) i and ii b) i and iii
c) ii and iii d) i, ii and iii
25. Body of which animal consists of two embryonic layers?
a) *Obelia* b) Liver fluke
c) Earthworm d) *Branchiostoma*
26. Coelenteron acts as—
i. digestive system
ii. circulatory system
iii. respiratory system
- Which one of the following is correct?
a) i and ii b) i and iii
c) ii and iii d) i, ii and iii
27. Cnidoblast helps in—
i. defense
ii. locomotion
iii. capture of prey
- Which one of the following is correct?
a) i and ii b) i and iii
c) ii and iii d) i, ii and iii
28. In which phylum is *Hydra* included?
a) Porifera b) Cnidaria
c) Annelida d) Nematoda
29. Applicable for Phylum-Cnidaria—
i. They have coelenteron
ii. They have cnidoblast in ectoderm
iii. Their body consists of one embryonic layer
- Which one of the following is correct?
a) i and ii b) i and iii
c) ii and iii d) i, ii and iii
30. What is the known the body cavity of *Hydra*?
a) Nephridia b) Cnidoblast
c) Haemocoel d) Coelenteron
31. The characteristics of Liver fluke/ Tape worm—
i. Body is covered with cuticle
ii. Digestive system is completed
iii. Flame cell acts as excretory organ
- Which one of the following is correct?
a) i and ii b) i and iii
c) ii and iii d) i, ii and iii
32. Which phylum is also called Nematelminthes?
a) Porifera b) Cnidaria
c) Annelida d) Nematoda
33. Round worm/ *Filaria* worm—
i. True coelom is absent
ii. Body cavity is without lining
iii. Digestive system is completed
- Which one of the following is correct?
a) i and ii b) i and iii
c) ii and iii d) i, ii and iii
34. Setae helps in—
a) defense b) excretion
c) locomotion d) capture of prey
35. What is the animal having characteristics of tubular and segmented body and Nephridia as excretory system?
a) Crab b) Earthworm
c) Liver fluke d) Roundworm
36. Earthworm/ Leech—
i. Body is tubular
ii. Body is segmented
iii. Nephridia is present as excretory system
- Which one of the following is correct?
a) i and ii b) i and iii
c) ii and iii d) i, ii and iii
37. Which one is pest?
a) Prawn b) Butterfly
c) Cockroach d) Honey bee
38. Haemocoel is the characteristics of which phylum?
a) Porifera b) Mollusca
c) Nematoda d) Arthropoda
39. Which one is the largest phylum?
a) Porifera b) Mollusca
c) Nematoda d) Arthropoda
40. Haemocoel is found in—
i. snail
ii. butterfly
iii. cockroach
- Which one of the following is correct?
a) i and ii b) i and iii
c) ii and iii d) i, ii and iii
41. Which one acts as a part of circulatory system?
a) Flame cell b) Nephridia
c) Haemocoel d) Cnidoblast
42. What is called the space filled with fluid between body wall and the alimentary canal of multi-cellular animal?
a) Coelom b) Nephridia



- c) Haemocoel d) Flame cell
43. Soft body of which animal is covered by mantle?
- a) Prawn b) Mussel
c) *Obelia* d) Starfish
- From the figure below, answer question nos. 44 and 45.



Fig: A



Fig: B

44. Which phylum does the animal of Fig: A belong to?
- a) Annelida b) Mollusca
c) Nematoda d) Arthropoda
45. The animal of Fig: B—
- i. head bears a pair of antenna
ii. muscular foot used for locomotion
iii. gaseous exchange takes place by gills
- Which one of the following is correct?
- a) i and ii b) i and iii
c) ii and iii d) i, ii and iii
46. Which phylum does crab belong to?
- a) Annelida b) Mollusca
c) Nematoda d) Arthropoda
47. Butterfly/ Prawn/ Cockroach/ Crab—
- i. joint appendages
ii. head bears a pair of compound eyes
iii. soft body is covered with hard chitinous exoskeleton
- Which one of the following is correct?
- a) i and ii b) i and iii
c) ii and iii d) i, ii and iii
48. Which phylum does snail belong to?
- a) Annelida b) Mollusca
c) Nematoda d) Arthropoda
49. Snail/ Mussel—
- i. muscular foot used for locomotion
ii. soft body, usually covered with hard shell
iii. gaseous exchange (Respiration) takes place by lungs or gills
- Which one of the following is correct?
- a) i and ii b) i and iii
c) ii and iii d) i, ii and iii
50. To which animal is radial symmetry applied?
- a) Snail b) *Ascidia*
c) Starfish d) *Spongilla*
51. Of which phylum are all the animals marine?
- a) Annelida b) Mollusca
c) Nematoda d) Echinodermata
52. Which animal moves using tube feet?
- a) Crab b) Snail
c) *Hydra* d) Starfish
53. The body of which animal is divided into five equal parts?

- a) Crab b) Snail
c) Leech d) Star fish
54. By which is locomotion done in the free living marine animals?
- a) Setae b) Tube feet
c) Appendages d) Muscular foot
55. Starfish/ Sea cucumber—
- i. pentamerous
ii. dermal skin bears spine
iii. distinct head dorsal and ventral surface in adults
- Which one of the following is correct?
- a) i and ii b) i and iii
c) ii and iii d) i, ii and iii
56. How many sub-phyla are there in the Phylum-Chordata?
- a) 2 b) 3
c) 4 d) 7
57. The notochord is—
- i. rod-like
ii. semi-rigid
iii. segmented
- Which one of the following is correct?
- a) i and ii b) i and iii
c) ii and iii d) i, ii and iii
58. *Ascidia/ Salpa* falls in—
- a) Urochordata b) Cyclostomata
c) Chondrichthyes d) Cephalochordata
59. The characteristics of *Salpa*—
- i. Notochord is restricted to the tail
ii. Notochord is present only in larval stage
iii. Notochord is present throughout the life cycle
- Which one of the following is correct?
- a) i and ii b) i and iii
c) ii and iii d) i, ii and iii
60. *Branchiostoma* falls in—
- a) Urochordata b) Cyclostomata
c) Chondrichthyes d) Cephalochordata
61. The characteristics of *Branchiostoma*—
- i. looking like fish
ii. commonly known as lancelets
iii. notochord is restricted to the tail
- Which one of the following is correct?
- a) i and ii b) i and iii
c) ii and iii d) i, ii and iii
62. *Petromyzon* falls in—
- a) Urochordata b) Cyclostomata
c) Chondrichthyes d) Cephalochordata
63. Appropriate for Class-Cyclostomata—
- i. fish like in form
ii. true jaws and paired appendages are present
iii. body slender, eel-like, rounded with naked skin
- Which one of the following is correct?

- a) i and ii b) i and iii
 c) ii and iii d) i, ii and iii
- From the figure below answer question nos. 64 and 65.



Fig: P



Fig: Q

64. Which of the following characteristic of the animals of Fig: P and Fig: Q is same?
 a) All marine b) No distinct head
 c) Streamlined body d) Cartilaginous skeleton
65. Which animal falls in the group of the animal of Fig: Q?
 a) Octopus b) Sea horse
 c) Sword fish d) Sea cucumber
66. Which animal is covered with placoid scales?
 a) Shark b) Pabda
 c) Hilsha d) Sea horse
67. Characteristics of Hammer fish—
 i. marine
 ii. homocercal tail
 iii. cartilaginous skeleton
 Which one of the following is correct?
 a) i and ii b) i and iii
 c) ii and iii d) i, ii and iii
68. Body of which fish is covered by cycloid, ctenoid or ganoid scales?
 a) Star fish b) Sea horse
 c) Sword fish d) Hammer fish
69. Characteristics of Hilsha fish—
 i. cycloid scale
 ii. heterocercal tail
 iii. four pair of gills are present
 Which one of the following is correct?
 a) i and ii b) i and iii
 c) ii and iii d) i, ii and iii
70. Which one is the cold-blooded animal?
 a) Tiger b) Toad
 c) Camel d) Magpie
71. Features of amphibians—
 i. skin with scales
 ii. lay eggs in water
 iii. larva breathes by gills
 Which one of the following is correct?
 a) i and ii b) i and iii
 c) ii and iii d) i, ii and iii
72. Which vertebrate animal is in Class-Reptilia?
 a) Frog b) Magpie
 c) Crocodile d) Petromyzon
73. Which one does not fall in Class-Reptilia?
 a) Toad b) Snake
 c) Crocodile d) Wall lizard

74. Features of reptiles—
 i. move by crawling
 ii. skin without scale
 iii. limbs usually with five toes
 Which one of the following is correct?
 a) i and ii b) i and iii
 c) ii and iii d) i, ii and iii

75. Animals of Class-Aves—
 i. warm blooded
 ii. jaws forming a beak
 iii. bones laced with air cavities
 Which one of the following is correct?
 a) i and ii b) i and iii
 c) ii and iii d) i, ii and iii

Basis on the chart below, answer the question nos. 76 and 77.

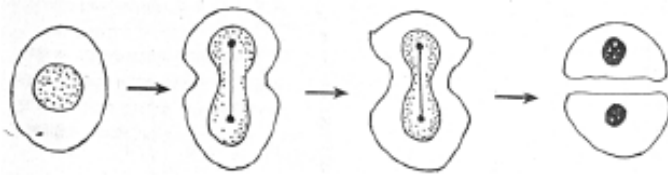
L	M	N	O
Frog	Snake	Magpie	Camel

76. Which one gives birth to child?
 a) L b) M
 c) N d) O
77. Characteristics of the animals of group L, M, N and O—
 i. Notochord persists throughout life
 ii. Notochord presents only in early stage
 iii. Body consists of two embryonic layers
 Which one of the following is correct?
 a) i b) ii
 c) iii d) i, ii and iii
78. Which class does man belong to?
 a) Aves b) Reptilia
 c) Amphibia d) Mammalia
79. The characteristics of mammals are—
 i. cold blooded animal
 ii. four chambered heart
 iii. females suckle their young on milk
 Which one of the following is correct?
 a) i and ii b) i and iii
 c) ii and iii d) i, ii and iii
80. What is called the unit of classification?
 a) Phyla b) Taxon
 c) Genus d) Species
81. How many major taxa are there?
 a) 6 b) 7
 c) 8 d) 9
82. Necessity of classification are—
 i. to identify any animals
 ii. to save labor, money and time
 iii. to determine the systematic position
 Which one of the following is correct?
 a) i and ii b) i and iii
 c) ii and iii d) i, ii and iii

Chapter-2: Growth and Heredity of Living Organism

Read the chapter properly & write down the answer of following creative questions:

❖ **Creative Question: 01**



- a) What is cell division? 1
- b) Explain the importance of cell division. 2
- c) Describe the process mentioned in the stem. 3
- d) "Above mentioned process has great economic importance."—Evaluate the statement. 4

❖ **Creative Question: 02**



- a) What is caryokinesis? 1
- b) What is meant by interphase? 2
- c) Draw a labeled diagram of the previous stage of the stem. 3
- d) What will be happened if the above mentioned process is not occurred in organisms? Describe. 4

❖ **Creative Question: 03**

Sejan collected a model of figure of cell division where the chromosomes are divided into two at their centromere.

- a) How many chromosomes are there in human body? 1
- b) What is meant by cytokinesis? 2
- c) Explain with figure the stage that mentioned in the stem. 3
- d) Justify whether the mentioned cell division is equational division or not. 4

❖ **Creative Question: 04**

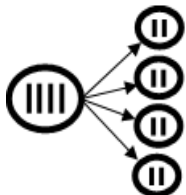


Fig: X

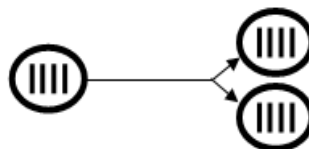


Fig: Y

- a) What is gene? 1
- b) What is meant by interphase? 2
- c) How Fig: X plays role in the flow of generation. Explain. 3
- d) Compare the process of Fig: X and the process of Fig: Y mentioned in the stem. 4

[N. B:— All the writings will be in a new copy (Khata).]

20. In which stage of mitosis, spindle apparatus is formed?

- a) Prophase b) Metaphase
c) Anaphase d) Pro-metaphase

21. In which stage is aster fiber radiated in animal cell?

- a) Prophase b) Telophase
c) Anaphase d) Pro-metaphase

22. Which cell organelle radiates astral ray?

- a) Fragmoplast
b) Chromatic reticulum
c) Endoplasmic reticulum
d) Centriole of centrosome

23. What is the name of the stage of mitosis cell division where chromosomes come at the equatorial region and are found shortest and thick?

- a) Prophase b) Telophase
c) Anaphase d) Metaphase

24. Which stage of mitosis cell division creates daughter chromosome?

- a) Prophase b) Metaphase
c) Anaphase d) Pro-metaphase

From the figure below, answer question nos. 25, 26 and 27.



Fig: A

25. 'S' is formed in which stage?

- a) Prophase b) Metaphase
c) Anaphase d) Pro-metaphase

26. Which stage of mitosis cell division is shown in the Fig: A?

- a) Prophase b) Metaphase
c) Anaphase d) Pro-metaphase

27. In the next stage of the stage of Fig: A—

- i. The chromosome move towards the respective poles
ii. Chromosomes take different shapes such as V, L, J or I
iii. Chromosome come and locates at the equator of spindle apparatus

Which one of the following is correct?

- a) i and ii b) i and iii
c) ii and iii d) i, ii and iii

28. In which stage is cytokinesis started?

- a) Prophase b) Telophase
c) Anaphase d) Metaphase

29. In which stage of mitosis are daughter chromosomes formed?

- a) Prophase b) Metaphase
c) Anaphase d) Pro-metaphase

30. In mitosis cell division—

i. nucleus is divided once

ii. four daughter cells are created from one mother cell

iii. number of chromosome of daughter cell becomes equal to mother cell

Which one of the following is correct?

- a) i and ii b) i and iii
c) ii and iii d) i, ii and iii

31. What is the result of irregular mitotic division?

- a) Gamete b) Tumour
c) Zygote d) Haploid cell

32. In the stage of Telophase—

i. chromosome loses their identity

ii. nuclear membrane and nucleolus reappear

iii. chromosome reverts to a diffuse chromatin network

Which one of the following is correct?

- a) i and ii b) i and iii
c) ii and iii d) i, ii and iii

33. What is deposited at the equatorial region during cytokinesis?

Which one of the following is correct?

- a) Leucoplast b) Cytoplasm
c) Chloroplast d) Fragmoplast

34. Which one of the following is called reduction division?

- a) Meiosis b) Mitosis
c) Amitosis d) Cytokinesis

35. In how many successive phases is meiosis cell division completed?

- a) 2 b) 3
c) 4 d) 5

36. Meiosis takes place in—

i. In growing leaves, buds, etc.

ii. the testes and ovary of higher animals

iii. the stamen and carpel of flowering plants

Which one of the following is correct?

- a) i and ii b) i and iii
c) ii and iii d) i, ii and iii

From the figure below, answer question nos. 37 and 38.

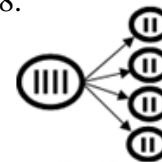


Fig: X

37. The process of Fig: X—

i. Cell encounters two successive divisions

ii. The second division is basically a mitotic division

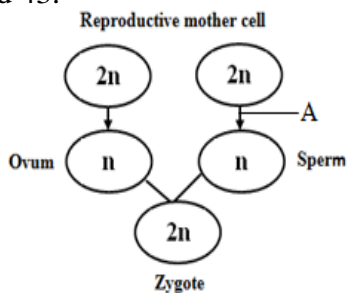
iii. Takes place in the zygote of haploid organisms (lower plants)

Which one of the following is correct?

- a) i and ii b) i and iii
c) ii and iii d) i, ii and iii

38. Where is the process of Fig: X occurred?

- a) In reproductive cells
 b) In unicellular animals
 c) In growing leaves, buds, etc.
 d) In somatic cell of plant and animal
39. In which phase of cell division does the number of chromosomes in the daughter cell become half of the number of chromosomes of mother cell?
 a) Meiosis-I b) Meiosis-II
 c) Telophase d) Prometaphase
40. Which cell division helps to retain heredity?
 a) Meiosis b) Meiosis, mitosis
 c) Amitosis, mitosis d) Amitosis, meiosis
41. The characteristics of meiosis included—
 i. Nucleus divides twice
 ii. Chromosome divides once
 iii. Four haploid cells are produced
 Which one of the following is correct?
 a) i and ii b) i and iii
 c) ii and iii d) i, ii and iii
- From the figure below, answer question nos. 42 and 43.



42. What is the process 'A' mentioned in the stem?
 a) Mitotic b) Meiotic
 c) Amitosis d) Cytokinesis
43. The process mentioned in the stem—
 i. produces diploid zygote
 ii. produces haploid gametes
 iii. maintains the continuity of heredity trait
 Which one of the following is correct?
 a) i and ii b) i and iii
 c) ii and iii d) i, ii and iii
44. How many reproductive cells are formed from a mother cell during meiosis cell division?
 a) 1 b) 2
 c) 4 d) 6
45. Zygote is—
 i. the features of mitosis division
 ii. the result of the union of two gametes
 iii. the state of the union of two haploid cells
 Which one of the following is correct?
 a) i and ii b) i and iii
 c) ii and iii d) i, ii and iii
46. Who is called the father of genetics?
 a) Mendel b) Aristotle
 c) Linnaeus d) John Ray
47. When was Gregor Johann Mendel born?
 a) 1820 b) 1822

- c) 1920 d) 1922
48. In which subjects Mendel's research, his two laws and gene are discussed?
 a) Genetics b) Taxonomy
 c) Heredity d) Bio-chemistry
49. Which one of the following controls skin color of human?
 a) DNA b) RNA
 c) Nucleus d) Centromere
50. How many chromosomes are there in human body?
 a) 23 b) 46
 c) 22 pairs d) 46 pairs
51. What is the physical basis of heredity?
 a) Nucleus b) Cytoplasm
 c) Chromosome d) Mitochondria
52. What is called the place where two chromatids are joined?
 a) Centrosome b) Centromere
 c) Chromomere d) Chromosome
53. DNA is—
 i. ribonucleic acid
 ii. the chemical form of gene
 iii. the main particle of chromosome
 Which one of the following is correct?
 a) i and ii b) i and iii
 c) ii and iii d) i, ii and iii
54. RNA is found in the chromosome of which organism?
 a) HIV b) TMV
 c) T₂ Faz d) Papiloma
55. Which one plays vital role in transmission of heredity traits?
 i. DNA
 ii. RNA
 iii. Gene
 Which one of the following is correct?
 a) i and ii b) i and iii
 c) ii and iii d) i, ii and iii
56. Chromosome—
 i. Thread-like objects
 ii. Bears the hereditary characters of organism
 iii. Consists of two parts-chromatid and centromere
 Which one of the following is correct?
 a) i and ii b) i and iii
 c) ii and iii d) i, ii and iii

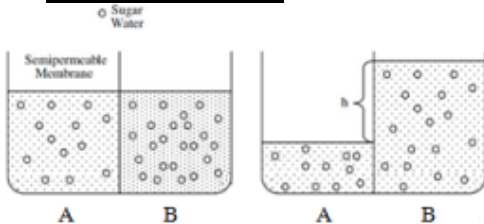
Read the chapter properly & write down the answer of following creative questions:

❖ **Creative Question:**

To perform an experiment science teacher kept some potassium permanganate granules into a beaker of water. After a while the whole water turned into violet color. The teacher told that the process through which the whole water turned into violet color takes place in every physiological process of the organism.

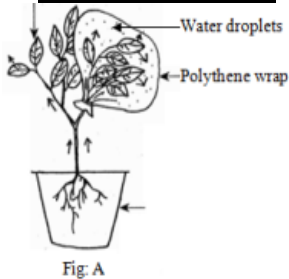
- a) What is cell sap? 1
- b) What is meant by diffusion pressure? 2
- c) Explain the process through which the water of the beaker turned into violet color. 3
- d) "The process through which the water turned into violet color takes place in every physiological process of the organism." —Evaluate the statement. 4

❖ **Creative Question:**



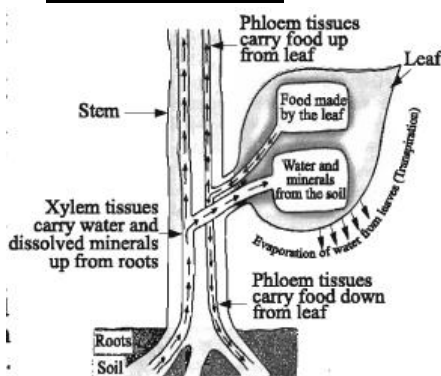
- a) What is capillary water? 1
- b) Why is cell membrane semi-permeable membrane? 2
- c) What type of movement of the molecules from 'A' to 'B' in the above stem is? Explain. 3
- d) In which cases the above stem's process is essential for the animal kingdom? Describe. 4

❖ **Creative Question:**



- a) What is semi-permeable membrane? 1
- b) Write down the difference between diffusion and osmosis. 2
- c) Explain how the water droplets appear inside the polythene bag. 3
- d) Evaluate the importance of the process in Fig: A. 4

❖ **Creative Question:**



- a) What is imbibition? 1
- b) Why is transpiration called necessary evil? 2
- c) Explain the process mentioned in the figure. 3
- d) "Like absorption, the process mentioned in the stem has a great importance in plant body." Evaluate the statement. 4

Multiple Choice Questions
Chapter Three
Diffusion, Osmosis and Absorption

Name: Date:

Class: VIII

Subject: Science

- Motion of which molecule is very fast?
a) Iron b) Zinc
c) Copper d) Oxygen
- What happens when the concentration of molecules become equal in two regions?
a) Diffusion stops
b) The rate of diffusion increases
c) The rate of diffusion decreases
d) The rate of diffusion does not change
- Due to diffusion—
i. dry grapes swollen up
ii. the whole room becomes scented
iii. water takes the color of copper sulphate
Which one of the following is correct?
a) i and ii b) i and iii
c) ii and iii d) i, ii and iii
- Due to which energy of the molecule, is a potential pressure exerted in the process of diffusion?
a) Kinetic energy b) Thermal energy
c) Potential energy d) Chemical energy
From the stem below, answer question nos. 5 and 6.
To perform an experiment science teacher poured some potassium permanganate into the water of a beaker. After a while the whole water turned into violet colour.
- What is the name of the process by which the water of the beaker turned into violet colour?
a) Osmosis b) Diffusion
c) Imbibition d) Transpiration
- The process by which water of the beaker turned into violet colour—
i. oxygen enters into cells
ii. animals carry out respiration
iii. plant leaves O_2 during photosynthesis
Which one of the following is correct?
a) i and ii b) i and iii
c) ii and iii d) i, ii and iii
- Which process helps plants in the exchange of CO_2 and O_2 ?
a) Osmosis b) Diffusion
c) Imbibition d) Transpiration
- What does the living cell use for the oxidation of glucose?
a) N_2 b) O_2
c) H_2O d) CO_2
- Necessary elements for the experiment of diffusion—
i. water
ii. beaker
iii. copper sulphate
Which one of the following is correct?
a) i and ii b) i and iii
c) ii and iii d) i, ii and iii
- Through which process is the carrying of oxygen occurred from blood to lymph?
a) Osmosis b) Diffusion
c) Imbibition d) Transpiration
- Which one is impermeable membrane?
a) Cell wall b) Polythene
c) Fish potka d) Cell membrane
- Impermeable membrane are—
i. cell wall
ii. polythene
iii. cell wall made of cutin
Which one of the following is correct?
a) i and ii b) i and iii
c) ii and iii d) i, ii and iii
- Which one is permeable membrane?
a) Cell wall b) Polythene
c) Fish potka d) Cell membrane
- Which one is a semi-permeable membrane?
a) Cell wall b) Polythene
c) Cell membrane d) Cutinic cell wall
- Semi-permeable membrane are—
i. cell membrane
ii. membrane of fish potka
iii. membrane inside the egg shell
Which one of the following is correct?
a) i and ii b) i and iii
c) ii and iii d) i, ii and iii
- By which process does the water molecule enters into the dry grapes?
a) Osmosis b) Diffusion
c) Imbibition d) Transportation
- The necessary things for the experiment of osmosis—
i. Thistle funnel
ii. Swim bladder
iii. Concentrated sugar
Which one of the following is correct?
a) i and ii b) i and iii
c) ii and iii d) i, ii and iii

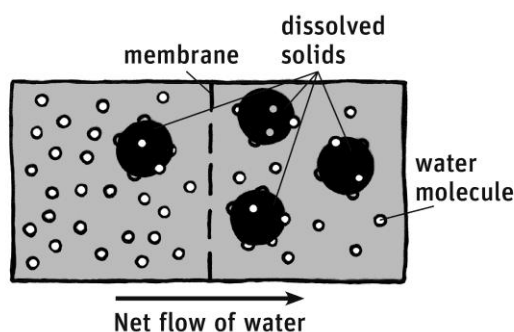
18. Which type of membrane is used in osmosis process?
 a) Permeable
 b) Impermeable
 c) Semi-permeable
 d) Differentially permeable

19. In osmosis process—
 i. Semi-permeable membrane is required
 ii. Solvent diffuses from lower to higher concentration
 iii. Solvent diffuses from higher to lower concentration

Which one of the following is correct?

- a) i and ii
 b) i and iii
 c) ii and iii
 d) i, ii and iii
20. By which process do plants absorb water and minerals dissolved in water from soil through unicellular root hair?
 a) Osmosis
 b) Diffusion
 c) Imbibition
 d) Transportation
21. What is called the intra cellular water and mineral salt solution together?
 a) Nutrient
 b) Hormone
 c) Simply sap
 d) Capillary water

From the stem below, answer question nos. 22, 23 and 24.



22. What is the name of the process mentioned in the stem?
 a) Osmosis
 b) Diffusion
 c) Imbibition
 d) Transportation
23. What will be the process in the case of movement of water molecules?
 a) Osmosis
 b) Diffusion
 c) Imbibition
 d) Transportation

24. Due to the process, mentioned in the stem—
 i. turgidity of cell is increased
 ii. plants can open and close its petal
 iii. exchange of O_2 and CO_2 occurs in animals
 Which one of the following is correct?

- a) i and ii
 b) i and iii
 c) ii and iii
 d) i, ii and iii
25. Actually which process helps to keep stem and leaf fresh and straight?
 a) Osmosis
 b) Diffusion
 c) Imbibition
 d) Transpiration

26. Through which process does the wall of the root hair absorb water?
 a) Osmosis
 b) Diffusion
 c) Imbibition
 d) Endosmosis

27. By which process does the water enter into the cell through plasmalemma or plasma membrane?
 a) Diffusion
 b) Imbibition
 c) Endosmosis
 d) Transpiration

28. Water flows from one cell to another and finally reaches to the leaves through—
 a) Xylem fiber
 b) Xylem vessel
 c) Xylem tracheid
 d) Xylem parenchyma

29. Colloidal substances are—
 i. starch
 ii. gelatin
 iii. cellulose

Which one of the following is correct?

- a) i and ii
 b) i and iii
 c) ii and iii
 d) i, ii and iii
30. Into how many parts is the salt absorption process divided?

- a) 2
 b) 3
 c) 4
 d) 5

31. What is called the process of loss of water in the form of water vapor through evaporation from the external tissues of the aerial parts of the plants?
 a) Osmosis
 b) Diffusion
 c) Transpiration
 d) Transportation

32. How many types of transpiration are there?
 a) 2
 b) 3
 c) 4
 d) 5

33. Transpiration is occurred through—
 i. cuticle
 ii. lenticel
 iii. stomata

Which one of the following is correct?

- a) iii
 b) i and iii
 c) ii and iii
 d) i, ii and iii
34. Large amount of transpiration occurs through—

- a) Cuticle
 b) Stomata
 c) Lenticel
 d) Root hair

35. Which one is necessary evil for plant?
 a) Osmosis
 b) Diffusion
 c) Transpiration
 d) Transportation

36. Which one of the following is solvent?
 a) Salt
 b) Sand
 c) Sugar
 d) Water

37. The requirements for the experiment of transpiration—
 i. Vaseline

- ii. Polythene
iii. Potted plant

Which one of the following is correct?

- a) i and ii b) i and iii
c) ii and iii d) i, ii and iii
38. What can be seen only in naked eyes?
a) Lenticel b) Stomata
c) Guard cell d) Epidermal cell
39. Which process helps to increase the concentration of cell sap?
a) Diffusion b) Endosmosis
c) Transpiration d) Transportation
40. Where is lenticel found?
a) Root b) Stem
c) Flower d) Leaves
41. Transpiration—
i. maintains proper humidity of leaves
ii. ensures the continuous supply of water
iii. creates the right condition for endosmosis
Which one of the following is correct?
a) i and ii b) i and iii
c) ii and iii d) i, ii and iii
42. Which process creates pull into the xylem vessels?
a) Diffusion b) Transpiration
c) Photosynthesis d) Transportation
- From the figure below, answer question nos. 43 and 44.

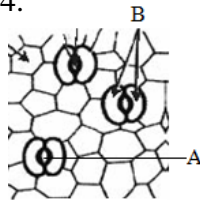


Fig: X

43. What is done by 'A' of Fig: X?
a) Respiration
b) Transpiration
c) Absorption of water
d) Absorption of mineral salts

44. What is called the 'B' marked part of Fig: X?
a) Stroma b) Cuticle
c) Stomata d) Guard cell
45. What is called the process by which plants manufacture food?
a) Diffusion b) Transpiration
c) Photosynthesis d) Transportation
46. Vascular bundle consists of—
i. xylem
ii. phloem
iii. guard cell
Which one of the following is correct?
a) i and ii b) i and iii
c) ii and iii d) i, ii and iii
47. What is called the process by which absorbed water from root hair reaches leaves and food from leaves reaches different part of the plant body?
a) Diffusion b) Transpiration
c) Photosynthesis d) Transportation
48. Transportation takes place through—
i. xylem tissue
ii. phloem tissue
iii. transporting channels
Which one of the following is correct?
a) i and ii b) i and iii
c) ii and iii d) i, ii and iii
49. The stem and midrib of which plant is transparent?
a) Sugarcane b) Mango plant
c) Money plant d) Peperomia plant
50. Xylem vessel carries—
i. cell sap
ii. liquid food materials
iii. water and dissolved minerals
Which one of the following is correct?
a) i and ii b) i and iii
c) ii and iii d) i, ii and iii

Creative Question & Answer
Chapter Four
Reproduction in Plants**Class: VIII****Subject: Science****1.**

Fig: A



Fig: B

- a) What is reproduction? 1
- b) Why is asexual reproduction important for plant? 2
- c) Explain how the reproduction process occurs in the component of Fig: A. 3
- d) The vegetative reproduction is same in the both components although the method is different.—Analyze the justification of the statement. 4

Answer to the Question No.-1**1(a)**

The complex process by which an organism produces its offspring is known as reproduction.

1(b)

Asexual reproduction is important for plant because the offspring produced through this process will be exact genetic copies of the parent.

Asexual reproduction is a mode of reproduction by which offspring is arisen from a single parent, and inherit the genes of that parent only; it is reproduction which does not involve meiosis, fertilization. Plants produced from seeds sometimes show less productivity and inferior quality. In these plants asexual reproduction is a useful tool to restore the parental quality.

1(c)

The component of Fig: A is potato. The reproduction process occurred in potato is natural vegetative reproduction which is tuber.

Tuber is one kind of modified stem. This modification occurs in order to protect from adverse condition, to ensure storage of food or for vegetative reproduction.

In potato, stem tubers are formed by outgrowths from the lowest axillary buds which turn downwards into the soil. Eventually the tip of the underground stem fills with starch and swells rapidly to form a tuber. Tubers are distinguished by their origin and the presence on their surfaces of scale leaves and axillary buds, which form the eyes. From each eye an individual plant grows.

1(d)

The component of Fig: A is potato and the component of Fig: B is ginger. The vegetative reproduction of both potato and ginger is occurred through modified stem but one is tuber and other is rhizome.

Tuber and rhizome are two kinds of modified stem. This modification of stem occurs in order to protect from adverse condition, to ensure storage of food or for vegetative reproduction. Tuber is found in potato and rhizome is found in ginger plant.

In potato, stem tubers are formed by outgrowths from the lowest axillary buds which turn downwards into the soil. Eventually the tip of the underground stem fills with starch and swells rapidly to form a tuber. Tubers are distinguished by their origin and the presence on their surfaces of scale leaves and axillary buds, which form the eyes. From each eye an individual plant grows. On the other hand in ginger rhizome lies parallel inside the soil. It bears distinct node and internode. Internode bears scale leaves and axillary buds. They become fattening and juicy by storing food. In favourable condition these buds grows into individual plants.

Potato and ginger both reproduce through natural vegetative reproduction which is occurred through modified stem. The modified stem of potato is tuber and the modified stem of ginger is rhizome. The formation of tuber and rhizome are different. So we can say that the vegetative reproduction process of both potato and ginger is same although the method is different.

2.

Different parts of a flower	
A	From which other parts grow
B	Outermost whorl
C	Coloured and scented part
D	Third whorl
E	Central part

- a) What is sporangium? 1
- b) What do you mean by bulbil? 2
- c) Draw a diagram of the longitudinal section of the plant part constituted by A, B, C, D and E. 3
- d) Among A, B, C, D and E which two parts are more essential for plant reproduction? Give reason in favor of your answer. 4

Answer to the Question No.-2

2(a)

The modified somatic cells of the plant body produce organs which contain spores. These are known as spore case (sac) or sporangium.

2(b)

Bulbil is one kind of modified stem through which vegetative reproduction occurs in some plants.

The improper development of axillary buds of some plants forms round shaped structure called bulbil. After sometimes, bulbil is separated from the plant and drops on soil and finally produces new plants.

2(c)

'A', 'B', 'C', 'D' and 'E' are receptacle, sepal, petal, stamen and carpel respectively. The part of plant which will be constituted with receptacle, sepal, petal, stamen and carpel is a flower. A labeled diagram of the longitudinal section of flower is drawn below—

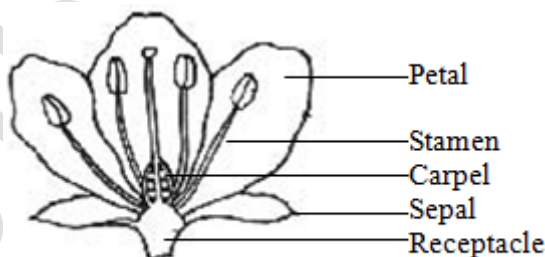


Fig: A typical flower

A typical flower consists of five parts, such as—

- 1) Receptacle
- 2) Sepal
- 3) Petal
- 4) Stamen
- 5) Carpel

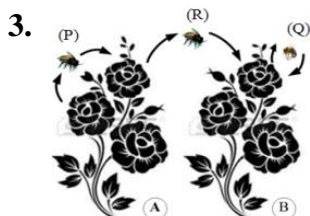
2(d)

'A', 'B', 'C', 'D' and 'E' are receptacle, sepal, petal, stamen and carpel respectively. Among these stamen and carpel are more essential for plant reproduction as these two parts directly take part in reproduction.

Flower is the reproductive organ of flowering plant. A typical flower consists of five parts, such as—receptacle, sepal, petal, stamen and carpel. Among these stamen and carpel are male and female reproductive organ respectively.

Stamens are known collectively as androecium. These are the male reproductive organs. A stamen consists of a stalk (filament) bearing an anther. Each anther is made up of four pollen sacs in which pollen grains are formed. Pollen grains contain the male gametes. Carpels are the female reproductive organs. Each carpel consists of an expanded hollow base called the ovary. Within the ovary there are varying numbers of ovules. An ovule contains the female sex cell.

During fertilization male gamete produced in stamen fuses with female gamete produced in carpel and fertilizes it. As a result zygote is produced. So it can be said that stamen and carpel are more essential part of a flower for the sexual reproduction of plant.



- | | |
|---|---|
| a) What is conidium? | 1 |
| b) What do you mean by grafting? | 2 |
| c) Explain the pollination process (P) and (Q). | 3 |
| d) Which pollination among (P), (Q) and (R) plays role in creating new characteristics?—Analyze | 4 |

Answer to the Question No.-3

3(a)

Spore may develop outside the sporangium. These are known as exospores. Some exospores are known as conidium.

3(b)

Grafting is one kind of artificial vegetative reproduction.

The process by which a straight, young and fresh stem develops root and thus enables the stem to live individually is known as grafting. A cut is made in the bark of the stem, where roots to be developed.

3(c)

Pollination process 'P' and 'Q' is self pollination.

Pollination is the transfer of pollen grains from anthers to stigmas. If the transfer of pollens from anthers to stigmas occurs in the same flower or between flowers on the same plant then it is called self pollination.

In the stem it is seen that in 'P', transfer of pollen grain occurs in between two flowers of same plant and in 'Q', transfer of pollen grain occurs in same flower. As transfer of pollen grain occurs in same flower and between two flowers of same plant, so the pollination process 'P' and 'Q' is self pollination.

3(d)

Pollination process 'P' and 'Q' is self pollination and 'R' is cross pollination. Between these, cross pollination plays role in new characteristics.

Pollination is the transfer of pollen grains from anthers to stigmas. If the transfer of pollens occurs from one plant to the stigmas on another plant of same species then it is called cross pollination.

In the stem it is seen that in 'R', transfer of pollen grain occurs in between two flowers of two different plants of same species. The seeds produced in this way carry the genetic information of two different plants which allows for diversity in the species. As a result plants developed from these seeds carry new characteristics.

As cross pollination occurs in between two different plants, the seed produced in this way is born with new more characters. This is why new varieties of those plants are emerged. So it can be said that cross pollination plays role in creating new characteristics.

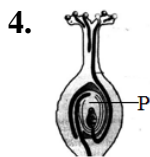


Fig: X

- a) What is inflorescence? 1
- b) Differentiate between self and cross pollination? 2
- c) Explain the process of figure 'X'. 3
- d) "After fertilization the changed state of the labeled part 'P' plays a significant role for the living world."—Analyze the statement. 4

Answer to the Question No.-4

4(a)

The mode of arrangement of flowers on the floral axis is known as inflorescence.

4(b)

Pollination is the transfer of pollen grains from anthers to stigmas. Pollination is of two types—self pollination and cross pollination. Difference between self pollination and cross pollination is given below—

Self pollination	Cross pollination
1) Transfer pollen grain occurs from anther to stigma of the same flower.	1) Transfer pollen grain occurs from anther to stigma of the different flowers of same species.
2) Does not depend on a carrier for pollination	2) Depends on a carrier for pollination
3) Wastage of pollen is less.	3) Wastage of pollen is more.
4) Pollination is ensured.	4) Pollination may not be ensured.
5) The newly born plants breed seeds with less vigour.	5) The newly born plants breed seeds with more vigour.
6) No new character appears in the new generation of plants.	6) New characters are emerged
7) The purity of species is maintained.	7) The purity of species is impaired.

4(c)

The process of Fig: X is fertilization.

Formation of gamete is the precondition of fertilization. The sexual union of the motile and small male gamete with the comparatively bigger, non - motile female gamete is known as fertilization.

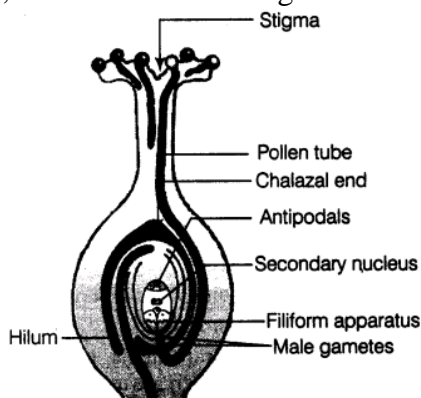


Fig: Fertilization

Pollen grains are transferred to the stigmas by pollination. The stigma produces a sticky fluid which nourishes the pollen grains and stimulates each other to burst open and develop a long, hollow, tubular

outgrowth known as pollen tube. This tube pushes its way between cells of the style and grows towards the ovule and finally reaches the embryo sac. By this time, two male gametes are formed inside the pollen tube. The apex of the pollen tube ruptures (bursts open) releasing male gametes. Ovule contains embryo sac. Female gamete or ovum develops inside embryo sac. One of the two male gametes discharged from the pollen tube unites and fertilizes the egg. The other male nucleus (gamete) unites and fuses with secondary diploid nucleus and develops into cereal grains.

4(d)

The labeled part 'P' is an ovule. After fertilization ovule is changed to seed which plays a significant role for the living world as new plant is developed from this seed.

The sexual union of the motile and small male gamete with the comparatively bigger, non-motile female gamete is known as fertilization. After fertilization, the ovary alone or in combination with other floral parts turns into fruits and the ovules transform into seeds.

The process of the formation of fruits begins just immediately after the completion of fertilization. Fertilization ignites stimulation in ovary to make the way of developing fruits steadily and ultimately, ovules are turned into seeds. From seeds new plants are developed. The whole animal kingdom directly or indirectly depends on these plants for their food.

If seeds are not formed, new plants will not be developed. As a result the animal kingdom dependent on plants will be destroyed. So it is very important to develop seed. At the end of the discussion it can be said that after fertilization the changed of ovule plays a significant role for the living world.

Multiple Choice Questions
Chapter Four
Reproduction in Plants

Class: VIII
Subject: Science

- How many types of reproduction are there?
 a) 2 b) 3
 c) 4 d) 5
- Asexual reproduction—
 i. does not involve mitosis
 ii. inherits the gene of single parent
 iii. found in lower graded living beings
 Which one of the following is correct?
 a) i and ii b) i and iii
 c) ii and iii d) i, ii and iii
- What does the sporangium bear?
 a) Spore b) Pollen
 c) Zygote d) Gamete
- Which one reproduces by formation of conidia?
 a) *Mucor* b) *Agaricus*
 c) *Spirogyra* d) *Penicillium*
 Observe the figure and answer questions no.5 and 6.

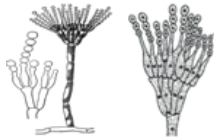


Fig. A

- Which process of reproduction is seen in the Fig: A of the stem?
 a) Segmentation
 b) Fragmentation
 c) Formation of exospores
 d) Formation of endospores
- In the reproduction process of Fig: A—
 i. Spore develops inside the sporangium
 ii. Spore develops outside the sporangium
 iii. Modified somatic cells produce spore case
 Which one of the following is correct?
 a) i and ii b) i and iii
 c) ii and iii d) i, ii and iii
- Generally segmentation is seen in—
 i. *Mucor*
 ii. *Agaricus*
 iii. *Spirogyra*
 Which one of the following is correct?
 a) i and ii b) i and iii
 c) ii and iii d) i, ii and iii
- Which one is not a natural vegetative reproduction?
 a) Stolon b) Bulbil
 c) Grafting d) Rhizome
- Which of the following causes reproduction through root?

- Mint b) Patol
 c) Garlic d) Potato
- The plants grown from root are—
 i. Patol
 ii. Segun
 iii. Sweet potato

Which one of the following is correct?

- i and ii b) i and iii
 c) ii and iii d) i, ii and iii
- Which one is modified stem?
 a) Onion b) Rose tree
 c) Stone chips d) Sweet potato
- Modification of stem occurs—
 i. for vegetative reproduction
 ii. in order to ensure storage of food
 iii. in order to protect from adverse condition
 Which one of the following is correct?
 a) i and ii b) i and iii
 c) ii and iii d) i, ii and iii
- Which one is tuber?
 a) Patol b) Ginger
 c) Potato d) Sweet potato

Observe the figure and answer questions no.14 and 15.



Fig: A

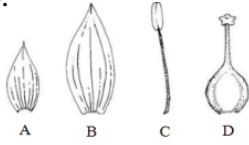
- Through what does Fig: A of the stem reproduce?
 a) Tuber b) Offset
 c) Stolon d) Rhizome
- In the reproduction process of Fig: A—
 i. the tip of the underground stem fills with starch
 ii. stem is formed by outgrowth from lowest axillary bud
 iii. scale leaves and axillary buds present on the surface of the stem
 Which one of the following is correct?
 a) i and ii b) i and iii
 c) ii and iii d) i, ii and iii
- Which one is the example of rhizome?
 a) Patol b) Ginger
 c) Potato d) Sweet potato
- Rhizome—
 i. lies parallel inside the soil
 ii. bears distinct nodes and internodes
 iii. formed by the lowest axillary buds
 Which one of the following is correct?

- a) i and ii b) i and iii
c) ii and iii d) i, ii and iii
18. Which one is the example of bulb?
a) Mint b) Arum
c) Garlic d) Ginger
19. Through what does onion reproduce?
a) Bulb b) Offset
c) Stolon d) Rhizome
20. Which one is the example of stolon?
a) Mint b) Patol
c) Spirodela d) Sweet potato
21. Which one is the reproductive organ of colocasia?
a) Bulb b) Offset
c) Stolon d) Rhizome
22. Stolon is seen in—
i. kochu
ii. pudina
iii. spirodela
Which one of the following is correct?
a) i and ii b) i and iii
c) ii and iii d) i, ii and iii
23. What is called the short runner?
a) Bulb b) Offset
c) Bulbil d) Stolon
24. Which one is an offset plant?
a) Mint b) Arum
c) Garlic d) Water hyacinth
25. Which one forms short runner?
i. Aurum
ii. Spirodela
iii. Water hyacinth
Which one of the following is correct?
a) i and ii b) i and iii
c) ii and iii d) i, ii and iii
26. What is called the round-shaped structure that is formed through the improper development of auxiliary buds?
a) Bulb b) Offset
c) Bulbil d) Stolon
27. Which one is the example of bulbil?
a) Yam b) Arum
c) Garlic d) Ginger
28. In which plant, are new plants originated from the buds created in the edge of leaves?
a) Ginger b) Rubble
c) Colocasia d) Sweet potato
29. Stone-chips reproduces through—
a) root b) stem
c) leaves d) flower
30. What is called the process by which a straight, young and fresh stem develops root and thus enables the stem to live individually?
a) Cutting b) Grafting
c) Vegetation d) Segmentation
31. What are necessary for grafting?
i. soil
ii. cow dung
iii. cellophane tape
Which one of the following is correct?
a) i and ii b) i and iii
c) ii and iii d) i, ii and iii
32. In which plant is cutting observed?
a) Rose b) Guava
c) Mango d) Pumpkin
33. Artificial vegetative reproduction—
a) shows inferior quality
b) shows less productivity
c) no new character appears
d) restores the parental quality
34. How many parts does a typical or complete flower have?
a) 2 b) 3
c) 4 d) 5
35. What is called the outermost whorl of a flower?
a) Petal b) Sepal
c) Carpels d) Stamens
36. Which flower has epi-calyx?
a) Datura b) Shimul
c) Mustard d) China rose
37. The parts of flower that directly take part in reproduction—
i. corolla
ii. androecium
iii. gynoecium
Which one of the following is correct?
a) i and ii b) i and iii
c) ii and iii d) i, ii and iii
38. Which part of flower is usually green?
a) Petal b) Sepal
c) Carpel d) Stamen
39. Which part of flower attracts insects?
a) Petal b) Sepal
c) Carpel d) Stamen
40. Petals of which flower are joined?
a) Datura b) Shimul
c) Mustard d) China rose
41. How many pollen sacs does each anther contain?
a) 2 b) 3
c) 4 d) 5
42. The parts of stamen are—
i. anther
ii. stigma
iii. filament

Which one of the following is correct?

- a) i and ii b) i and iii
c) ii and iii d) i, ii and iii

Observe the figure and answer questions no.43 and 44.



43. Which part of the stem attracts insects?

- a) A b) B
c) C d) D

44. The characteristics of part 'C'—

- i. fourth whorl of flower
ii. produce the male gametes
iii. collectively form androecium

Which one is correct?

- a) i and ii b) i and iii
c) ii and iii d) i, ii and iii

45. Which one is the central part of a flower?

- a) Petal b) Sepal
c) Carpel d) Stamen

46. Each carpel consists of—

- i. style
ii. ovary
iii. stigma

Which one of the following is correct?

- a) i and ii b) i and iii
c) ii and iii d) i, ii and iii

47. What are collectively known as pistil?

- a) Petals b) Sepals
c) Carpels d) Stamens

48. Inflorescence—

- i. important for pollination
ii. important for fertilization
iii. flowers are arranged on a floral axis

Which one of the following is correct?

- a) i and ii b) i and iii
c) ii and iii d) i, ii and iii

49. What is the precondition of fruits and seeds production?

- a) Pollination b) Germination
c) Fertilization d) Reproduction

50. Pollen grain may be—

- i. blue colored
ii. yellow colored
iii. orange colored

Which one of the following is correct?

- a) i and ii b) i and iii
c) ii and iii d) i, ii and iii

51. How many types of pollination are there?

- a) 2 b) 3
c) 4 d) 5

52. In self pollination, transfer of pollen grain occurs—

- i. in same flower
ii. in between two flowers of same plant
iii. in between flowers of two different plants of same species

Which one of the following is correct?

- a) i and ii b) i and iii
c) ii and iii d) i, ii and iii

53. In which plant does self pollination take place?

- a) Paddy b) Shimul
c) Papaya d) Mustard

54. Self pollinated flowers are—

- i. Datura
ii. Mustard
iii. Pumpkin

Which one of the following is correct?

- a) i and ii b) i and iii
c) ii and iii d) i, ii and iii

55. In which flower does cross-pollination take place?

- a) Datura b) Shimul
c) Mustard d) Pumpkin

56. Cross pollinated flowers are—

- i. Shimul
ii. Papaya
iii. Pumpkin

Which one of the following is correct?

- a) i and ii b) i and iii
c) ii and iii d) i, ii and iii

57. Which one is insect-pollinated flower?

- a) Paddy b) Shimul
c) Kadom d) Mustard

58. The characteristics of insect-pollinated flowers—

- i. flowers are large
ii. do not have nectar
iii. pollen and stigmas are sticky

Which one of the following is correct?

- a) i and ii b) i and iii
c) ii and iii d) i, ii and iii

59. Examples of insect pollinated flower are—

- i. paddy
ii. pumpkin
iii. china rose

Which one of the following is correct?

- a) i and ii b) i and iii
c) ii and iii d) i, ii and iii

60. The cause of being mustard/ pumpkin an insect pollinated flower—

- i. flower is colored
ii. flower is large and has nectars

iii. pollen grain and stigmas are sticky
Which one of the following is correct?

- a) i and ii b) i and iii
c) ii and iii d) i, ii and iii

61. Which one is wind pollinated flower?

- a) Paddy b) Shimul
c) Kadom d) Mustard

62. The cause of being paddy a wind-pollinated flower—

- i. anthers are on long stalks
ii. stigmas are sticky and branched
iii. do not have scent, nectar or colored petal
Which one of the following is correct?

- a) i and ii b) i and iii
c) ii and iii d) i, ii and iii

63. The characteristics of water-pollinated flowers—

- i. have scent
ii. can float in water
iii. small, light-weighted
Which one of the following is correct?

- a) i and ii b) i and iii
c) ii and iii d) i, ii and iii

64. Which one is not an animal-pollinated flower?

- a) Arum b) Kadom
c) Shimul d) China rose

65. The characteristics of animal-pollinated flowers—

- i. brightly colored
ii. moderately large
iii. small, light-weighted
Which one of the following is correct?

- a) i and ii b) i and iii
c) ii and iii d) i, ii and iii

Observe the figure and answer questions no. 66 and 67.

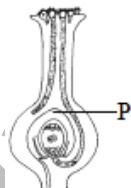


Fig: A

66. Which process of plant is the process of Fig: A in the stem?

- a) Pollination b) Germination
c) Fertilization d) Reproduction

67. 'P' marked part in the Fig: A—

- i. develops into fruit
ii. develops into seed
iii. helps in reproduction
Which one of the following is correct?

- a) i and ii b) i and iii
c) ii and iii d) i, ii and iii

68. What is the precondition of fertilization?

- a) Formation of seed
b) Sexual reproduction
c) Formation of zygote
d) Formation of gamete

69. What does stigma produces at the time of fertilization?

- a) Fluid b) Pollen
c) Spores d) Gamete

70. Where is ovum developed? Inside the—

- a) Ovule b) Ovary
c) Pollen tube d) Embryo sac

71. How many cells are there in the embryo sac?

- a) 5 b) 6
c) 7 d) 8

72. How many nuclei are there in the embryo sac?

- a) 5 b) 6
c) 7 d) 8

73. How many cells form egg apparatus?

- a) 2 b) 3
c) 4 d) 5

74. Which one of the following turns into fruit after fertilization?

- a) Ovary b) Ovule
c) Pollen tube d) Pollen grain

75. Which of the following parts of a flower is transformed into seed?

- a) Ovule b) Ovary
c) Pollen tube d) Pollen grain

76. The other male gamete which does not fuse with the egg, develops—

- a) Seed b) Fruit
c) Ovule d) Cereal grains

77. Which one develops triploid endosperm?

- a) Somatic cell
b) Synergid cell
c) Antipodal cell
d) Secondary nucleus

78. What is called the cell of opposite side of egg apparatus inside the embryo sac?

- a) Zygote cell b) Somatic cell
c) Synergid cell d) Antipodal cell

79. Into how many classes are all the fruits divided on the basis of their origin and nature?

- a) 2 b) 3
c) 4 d) 5

80. Which one is eaten after cooking?

- a) Grape b) Mango
c) Palwal d) Jackfruit

81. In the case of false fruit—

- i. ovary turns into fruit
ii. apple and dellenia are false fruits
iii. floral parts other than ovary turn into fruit

Which one of the following is correct?

- a) i and ii b) i and iii
c) ii and iii d) i, ii and iii

82. Lady's finger is a dry fruit because of having—

- i. thin pericarps
ii. succulent pericarps
iii. dehiscent pericarps

Which one of the following is correct?

- a) i and ii b) i and iii
c) ii and iii d) i, ii and iii

From the figure below, answer question nos. 83 and 84.



Fig: X

83. What type of fruit is the figure 'X'?

- a) Simple b) Multiple
c) Seedless d) Aggregate

84. How is the fruit of figure 'X' developed?

- i. with all the flowers of an inflorescence
ii. corresponds with the number of carpels
iii. with the merge of several ovaries with many carpels

Which one is correct?

- a) i & ii b) i & iii
c) ii & iii d) i, ii & iii

85. What is called the fruits which have thick and succulent pericarps?

- a) Dry fruits b) Fleshy fruits
c) Multiple fruits d) Aggregate fruits

86. Example of aggregate fruits—

- i. Akanda
ii. Nayantara
iii. Custard apple

Which one of the following is correct?

- a) i and ii b) i and iii
c) ii and iii d) i, ii and iii

87. Which one of the following is the example of multiple fruit?

- a) Bean b) Banana
c) Pineapple d) Custard apple

88. Which one is correct about a multiple fruit?

- a) Pericarp is very thin
b) There are many ovaries
c) Every single ovary turns into a fruit
d) A whole inflorescence turns into a fruit

89. The examples of multiple fruits are—

- i. Champa
ii. Jackfruit
iii. Pineapple

Which one of the following is correct?

- a) i and ii b) i and iii
c) ii and iii d) i, ii and iii

90. How many layers are there in a seed coat?

- a) 2 b) 3
c) 4 d) 5

91. What is known as the innermost layer of seed coat?

- a) Testa b) Radicle
c) Plumule d) Tegmen

From the figure below, answer question nos. 92 and 93.



92. In which plant, is the above process of germination seen?

- a) Gram b) Castor
c) Mango d) Paddy

93. The requirements for the above process are—

- i. air
ii. water
iii. warmth

Which one is correct?

- a) i & ii b) i & iii
c) ii & iii d) i, ii & iii

94. In where is hypogeal germination occurred?

- a) Mango b) Castor
c) Pumpkin d) Tamarind

95. In where is epigeal germination occurred?

- a) Gram b) Paddy
c) Mustard d) Pumpkin

Creative Question
Chapter Six
The Structure of Atoms

Class: VIII

Subject: Science

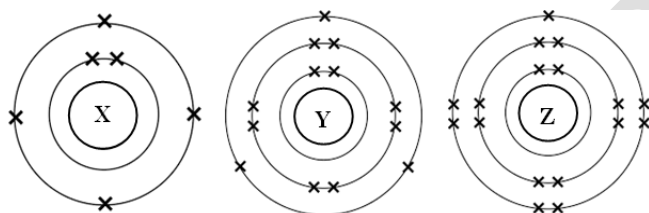
1. $^{12}_6\text{X}$, $^{13}_6\text{X}$, $^{14}_6\text{X}$

- a) What is atom? 1
- b) What do you mean by the mass number of sodium is 23? 2
- c) What are called the three atoms of element, 'X'?—Explain. 3
- d) Describe the different uses of the above types of atoms. 4

2. The atomic number of element, 'P' is 11 and the mass number is 23. The number of electrons of another element, 'Q' is 17.

- a) What are isotopes? 1
- b) Why is neon an inert gas? 2
- c) What are the numbers of electrons, protons and neutrons in element, 'P'? 3
- d) Show the equation of forming compound after demonstrating the configuration of electrons of the two elements mentioned in the stem. 4

3.



- a) What is nucleus? 1
- b) Why is neon an inert gas? 2
- c) Explain the isotopes of element 'X'. 3
- d) How can 'Y' and 'Z' gain their stability?—Give your opinion with logic. 4

4.

Element	Atomic number
X	10
Y	12
Z	17

- a) What is molecule? 1
- b) What do you mean by the atomic number of oxygen is 8? 2
- c) Explain the nature of element, 'X' after electrons distribution. 3
- d) Analyze the ability of formation of bond between Y and Z. 4

Multiple Choice Questions
Chapter Six
The Structure of Atoms

Name: Date:

Class: VIII

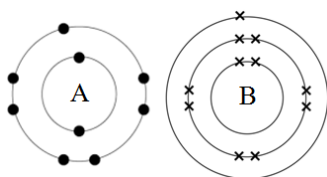
Subject: Science

-
- Who put forward idea with the tiny particles of matter for the first time?
a) Plato b) Aristotle
c) Democritus d) John Dalton
 - When did Democritus put forward idea with the tiny particle for the first time?
a) In 1803 b) In 300 BC
c) In 400 BC d) In 500 BC
 - Who called the tiny particles of matter as atom?
a) Plato b) Aristotle
c) Democritus d) John Dalton
 - What is the meaning of 'atomos'?
a) Divisible b) Indivisible
c) Different d) Tiny particles
 - The philosophers who differ with the idea of Democritus—
i. Plato
ii. Konad
iii. Aristotle
Which one of the following is correct?
a) i and ii b) i and iii
c) ii and iii d) i, ii and iii
 - Who said that the smallest particle of an element is an atom which cannot be divided any further?
a) Aristotle b) Rutherford
c) Democritus d) John Dalton
 - When was Dalton's atomic theory established?
a) In 1603 b) In 1703
c) In 1803 d) In 1903
 - Who is called the father of atomic model?
a) Niels Bohr b) Rutherford
c) Democritus d) John Dalton
 - The conclusion of Rutherford atomic model—
i. mass is confined to a small area
ii. most of the space in an atom is empty
iii. the negative charge is carried by electron
Which one of the following is correct?
a) i and ii b) i and iii
c) ii and iii d) i, ii and iii
 - "Atoms are indivisible." is proposed by—
i. Aristotle
ii. Democritus
iii. John Dalton
Which one of the following is correct?
a) i and ii b) i and iii
c) ii and iii d) i, ii and iii
 - Who used quantum theory of Planks?
a) Niels Bohr b) Rutherford
c) Democritus d) John Dalton
 - When did Niels Bohr put forward idea about the atomic structure?
a) In 1803 b) In 1807
c) In 1903 d) In 1913
 - What is the name of the positive charged particle?
a) Proton b) Neutron
c) Electron d) Positron
 - The atom of one element is different from the atom of another element in respect of—
i. atomic size
ii. atomic mass
iii. characteristics
Which one of the following is correct?
a) i and ii b) i and iii
c) ii and iii d) i, ii and iii
 - What is the net charge of a normal atom?
a) Zero b) Positive
c) Negative d) Both (b) and (c)
 - What is used to explain the behavior of an atom?
a) Valency b) Mass number
c) Atomic number d) Neutron number
 - Which of the following can be known from an element's atomic number?
a) Neutron number
b) Element's symbol
c) Electron's structure
d) Element's atomic number
 - Most of the mass of an atom is due to the mass of its—
i. nucleus
ii. electron
iii. proton and neutron
Which one of the following is correct?
a) i and ii b) i and iii
c) ii and iii d) i, ii and iii
 - Which element has no neutron in its nucleus?
a) Copper b) Sodium
c) Nitrogen d) Hydrogen
 - What is the atomic number of nitrogen?
a) 7 b) 8
c) 9 d) 10
 - Which one is the mass number of chlorine?
a) 8 b) 17

72. Which one is the electronic configuration of neon atom?

- a) 2, 5 b) 2, 6
c) 2, 8 d) 2, 8, 2

From the figure below, answer question nos. 73 and 74.



73. What is the name of the element A?

- a) Neon b) Carbon
c) Oxygen d) Fluorine

74. 'B' element—

- i. all orbits are full
ii. atomic number is 11
iii. forms compound with A

Which one of the following is correct?

- a) i and ii b) i and iii
c) ii and iii d) i, ii and iii

75. If the number of protons in a silicon atom is 14, what will be its atomic number?

- a) 5 b) 6
c) 11 d) 14

76. What is the number of electron in F?

- a) 3 b) 5
c) 7 d) 9

77. What is formed by the combination of more than one atom?

- a) Ion b) Neutron
c) Proton d) Molecule

78. How many electron does sulfur have?

- a) 12 b) 13
c) 15 d) 16

From the stem below, answer question nos. 78 and 79.

X, Y and Z are three elements whose atomic number is gradually 10, 11 and 12.

79. What is the electron number of X?

- a) 7 b) 10
c) 11 d) 12

80. The element of Y and Z—

- i. inert element
ii. produce cation
iii. donate electron

Which one of the following is correct?

- a) i and ii b) i and iii
c) ii and iii d) i, ii and iii