Mahatma Phule Shikshan Sanstha's

Karmaveer Bhaurao Patil College, Urun-Islampur.

B.Sc. Part- II. Semester III. 2025-26.

Botany Paper V: DSC C13: Plant Systematics and Anatomy

Objectives

1. The tissue which have ability of cell division is called…….tissue.
   a) permanent b) meristematic c) complex d) simple
2. The meristem responsible for increase in thickness of stem and root is …..
   a) apical b) intercalary c) lateral d) procambium
3. The meristems are classified on the basis of their position in plants in ……..groups.
   a) 1 b) 2 c) 3 d) 4
4. Apical cell theory was proposed by…….
   a) Hofmeister b) Nageli c) Hanstein d) Strasburger
5. The specialised parenchyma for photosynthesis is….
   a) chlorenchyma b) parenchyma c) aerenchyma d) prosenchyma
6. The cell wall of …. is unevenly thickened.
   a) collenchyma b) parenchyma c) aerenchyma d) sclerenchyma
7. …….is a lignified tissue.
   a) collenchyma b) parenchyma c) aerenchyma d) sclerenchyma
8. …….tissue provides tensile strength and elasticity for growing organs.
   a) collenchyma b) parenchyma c) xylem d) sclerenchyma
9. ……is a principle mechanical tissue in plants.
   a) collenchyma b) parenchyma c) phloem d) sclerenchyma
10. The dead cell in phloem is ……..
    a) sieve tube b) phloem parenchyma c) companion cell d) phloem fibre
11. The only living cell in xylem is …..
    a) tracheids b) vessels c) xylem parenchyma d) xylem fibres
12. The conduction of food material in sieve tubes is controlled by…..
    a) sieve tube b) phloem parenchyma c) companion cell d) phloem fibre
13. Vessels are present only in…….
    a) fungi b) pteridophyte c) gymnosperms d) angiosperms
14. Tracheids are the main component of xylem for conduction of water in….
    a) fungi b) pteridophyte c) bryophyte d) angiosperms

15. Conduction of water and dissolved mineral salts is the function of…….

a) xylem b) phloem c) parenchyma d) sclerenchyma

16. The conduction of food material in plants occur through…..

a) xylem b) phloem c) parenchyma d) sclerenchyma

17. The vascular bundles in plants are made up of …...

a) xylem b) phloem c) parenchyma d) both a & b

18. Perforated end walls of the vessels are called…...

a) sieve plate b) sieve area c) plasmodesmata d) stomata

19. In xylem ……cells are placed one above other and form pipeline like structure for conduction of water.

a)vessels b) tracheids c) xylem parenchyma d) xylem fibres

20. Xylem and phloem are called complex tissues as they are made up of ……types of cells.

a) 2 b) 3 c) 4 d) 6

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B.Sc. Part- II. Semester III. 2025-26.

Botany Paper V: DSC C13: Plant Systematics and Anatomy

Long Questions

Q.1. What is meristem? Describe the types of meristems based on their position in plants.

Q.2. What is simple tissue? Describe the different types of simple tissues.

Q.3. What is complex tissue? Describe the xylem and phloem.

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B.Sc. Part- II. Semester III. 2025-26.

Botany Paper V: DSC C13: Plant Systematics and Anatomy

Long Questions

Q.1. What is root? Describe the modification of roots.
Q.2. Define stem. Describe the modification of stem.
Q.3. Define flower. Describe the structure of typical flower.
Q.4. Define inflorescence. Describe the types of racemose inflorescence.
Q.5. Define inflorescence. Describe the types of cymose inflorescence.
Q.6. What is fruit? Describe different types of fruits.

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B.Sc. Part- II. Semester III. 2025-26.

Botany Paper V: DSC C13: Plant Systematics and Anatomy

Objective questions

1. Pneumatophores are known as ……..roots.
   a) breathing b) sucking c) stilt d) photosynthetic
2. Aerial, adventitious, pillar like roots of *Ficus* are known as ……..roots.
   a) breathing b) sucking c) prop d) photosynthetic
3. ……..is a modification of stem for photosynthesis.
   a) phylloclade b) tuber c) corm d) rhizome
4. Vegetative propagation of ginger is done by…….
   a) root b) bulb c) leaf d) rhizome
5. Stem tubers are found in……
   a) potato b) onion c) *amorphophallus* d) ginger
6. An axillary bud called 'eye' is present in …
   a) potato b) beet c) radish d) ginger
7. *Canna* is an example of …….flower.
   a) actinomorphic b) zygomorphic c) symmetrical d) all of these
8. ……is highly condensed and specially modified shoot for sexual reproduction.
   a) fruit b) seed c) flower d) stem
9. A natural cluster of flowers arranged on a special branch is called……..
   a) placentation b) inflorescence c) aestivation d) phyllotaxy
10. A stalk of inflorescence is known as……..
    a) pedicel b) peduncle c) petiole d) bract
11. In ……inflorescence main axis grows indefinitely to produce flower.
    a) racemose b) cymose c) cyathium d) hypanthodium.
12. Large bract present in spadix inflorescence is known as…….. .
    a) glume b) spathe c) palea d) scape
13. Capitulum or head inflorescence is charecteristc feature of family…….. .
    a) asteraceae b) fabaceae c) apocynaceae d) lamiaceae
14. ……. inflorescence is charecteristc feature of family lamiaceae.
    a) raceme b) cyathium c) verticillaster d) hypanthodium
15. In …… inflorescence flowers are arranged in acropetal succession.
    a) racemose b) cymose c) umbel d) spadix
16. Radish have …… type of root.
    a) conical b) fusiform c) napiform d) prop

17. When fruit is developed from fertilized ovary of a flower then it is called……fruit.

a) true b) false c) parthenocarpic d) pseudocarp

18. ……fruit is developed from polycarpellary apocarpous carpel of a flower.

a) simple b) aggregate c) composite d) none of these

19. …… is an example of false fruit.

a) apple b) tomato c) brinjal d) mango

20. Fibrous mesocarp is present in…… fruit.

a) mango b) coconut c) apple d) guava

Mahatma Phule Shikshan Sanstha's

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B.Sc. Part- II. Semester III. 2025-26.

Botany Paper V: DSC C13: Plant Systematics and Anatomy

Objective Questions

1. … fruit is developed from hypanthodium inflorescesce.
   a) sorosis b) syconus c) pome d) berry
2. Presence of caryopsis type of fruit is the diagnostic character of family…….
   a) lamiaceae b) poaceae c) asteraceae d) moraceae
3. Presence of hesperidium type of fruit is the diagnostic character of family…….
   a) lamiaceae b) poaceae c) asteraceae d) rutaceae
4. Presence of pod/legume type of fruit is the diagnostic character of family…….
   a) fabaceae b) poaceae c) asteraceae d) rutaceae
5. Jackfruit is an example of … type of fruit.
   a) cyconus b) aggregate c) fleshy d) sorosis
6. Fig is an example of … type of fruit.
   a) cyconus b) aggregate c) fleshy d) sorosis
7. ……is a dry, dehiscent, one or many seeded fruit that dehisces by both dorsal and ventral suture.
   a) legume b) follicle c) siliqua d) capsule
8. A false septum called replum is present in … type of fruit.
   a) siliqua b) capsule c) regma d) sorosis
9. … is a simple,dry, indehiscent, one seeded fruit with fused pericarp and testa.
   a) achene b) caryopsis c) cypsela d) samara
10. Cashew nut is an example of … type of fruit.
    a) nut b) legume c) follicle d) siliqua
11. A fruit of Acacia is an example of…… fruits.
    a) lomentum b) cremocarp c) carcerulus d) regma
12. ……is edible part of mango fruits.
    a) epicarp b) mesocarp c) endocarp d) all of these.
13. In …….. fruits endocarp consist of juicy, hair like sacs in its inner surface.
    a) pepo b) hespiridium c) balausta d) amphisarca
14. In pomegranate….. is edible part of fruits.
    a) epicarp b) mesocarp c) endocarp d) testa of seed.

15 .In apple….. is edible part of fruits.

a) epicarp b) mesocarp c) endocarp d) thalamus.

16. Bentham and Hooker published their work in…….

a) genera plantarum b) species plantarum c) kew bulletin d) encyclopedia of plants

17. Bentham and Hooker classified division phanerogams into ……..classes.

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

18. ……. Used the term herbarium foe plants.

a) Linnaeus b) Tourefort c) Lam d) de Candolle

19 Acronyme of Central National Herbarium Howrah, Calcutta is…….. .

a) CAL b) K c) CNH d) SUK

20. Lead botanical garden of Shivaji University was funded by…..

a) UGC b) DBT c) MoEF d) RUSA

21. The standard size of herbarium sheet is……..cm.

a) 27x43 b) 28x41 c) 29x43 d) 29x40

22. ……..is known as father of Taxonomy.

a) A.P.deCandolle b) J.D.Hooker c) C. Darwin d) Carl Linnaeus

Mahatma Phule Shikshan Sanstha's

Karmaveer Bhaurao Patil College, Urun-Islampur.

B.Sc. Part- II. Semester III. 2025-26.

Botany Paper V: DSC C13: Plant Systematics and Anatomy

QUESTION BANK

……

MULTIPLE CHOICE QUESTION.

1. ……..roots are modification of tap roots for storage of food material.
   a) conical b) fusiform c) napiform d) **all the above**
2. . ……..roots is modification of root for mechanical support.
   a) **prop** b) pneumatophores c) conical d) fusiform
3. Pneumatophores are known as ……..roots.
   a) **breathing** b) sucking c) stilt d) photosynthetic
4. Aerial, adventitious, pillar like roots of *Ficus* are known as ……..roots.
   a) breathing b) sucking c) **prop** d) photosynthetic
5. Minute openings present on pneumatophores are called…….. ……..
   a) stomata b) **lenticel** c) cuticle d) trichomes
6. ……..is a modification of stem for photosynthesis.
   a) **phyloclade** b) tuber c) corm d) rhizome
7. Underground, dorsiventral, sympodial rhizome of the ginger is a modification of stem for…….
   a) **storage of food** b) photosynthesis c) protection d) transpiration
8. Vegetative propagation of ginger is done by…….
   a) root b) bulb c) leaf d) **rhizome**
9. Corm, an underground fleshy upright stem is found in……
   a) potato b) onion c) **Amorphophallus** d) ginger
10. Corm, an underground fleshy upright stem is found in……
    a) potato b) onion c) ***Amorphophallus*** d) ginger
11. Stem tubers are found in……
    a) **potato** b) onion c) *amorphophallus* d) ginger
12. Stem tubers are found in……
    a) **potato** b) onion c) *amorphophallus* d) ginger
13. An axillary bud called 'eye' is present in …
    a) **potato** b) beet c) radish d) ginger
14. *Canna* is an example of …….flower.
    a) actinomorphic b) **zygomorphic** c) symmetrical d) all of these
15. *Hibiscus* is an example of …….flower.
    a) **actinomorphic** b) zygomorphic c) symmetrical d) all of these
16. ……is highly condensed and specially modified shoot for sexual reproduction.
    a) fruit b) seed c) **flower** d) stem

17. A typical flower consist of……. Whorls.
    a) 1 b) 2 c) 3 d) **4**
18. A natural cluster of flowers arranged on a special branch is called……..
    a) placentation b) **inflorescence** c) aestivation d) phyllotaxy
19. A stalk of flower is known as……..
    a) **pedicel** b) peduncle c) petiole d) bract
20. A stalk of inflorescence is known as……..
    a) pedicel b) **peduncle** c) petiole d) bract
21. In ……inflorescence main axis grows indefinitely to produce flower.
    a) **racemose** b) cymose c) cyathium d) hypanthodium.
22. In ……inflorescence main axis grows definitely to produce flower.
    a) racemose b) **cymose** c) cyathium d) hypanthodium
23. In ……..inflorescence sessile flowers are produced on elongated peduncle.
    a) raceme b) **spike** c) corymb d) umbel
24. Large bract present in spadix inflorescence is known as…….. .
    a) glume b) **spathe** c) palea d) scape
25. Capitulum or head inflorescence is charecteristc feature of family…….. .
    a) **asteraceae** b) fabaceae c) apocynaceae d) lamiaceae
26. ……. inflorescence is charecteristc feature of family lamiaceae.
    a) raceme b) cyathium c) **verticillaster** d) hypanthodium
27. Hypanthodium type of inflorescence is charecteristc feature of genus…….
    a) ***Ficus*** b) *Euphorbia* c) *Ocimum* d) *Helianthus*
28. Genus *Euphorbia* is known for presence of ……..inflorescence.
    a) **Cyathium** b) Hypanthodium c) Verticillaster d) Capitulum
29. In ……..inflorescence peduncle is weak, pendulous with sessile unsexual flowers.
    a) Cyathium b) **catkin** c) spadix d) spikelet
30. ……. inflorescence is commonly found in Araceae members.
    a) Cyathium b) catkin c) **spadix** d) spike
31. In ……. inflorescence flowers are arranged in one flat plane due to unequal lengths of pedicels.
    a) umbel b) **corymb** c) capitulum d) spadix
32. In ……. inflorescence flowers are arranged centripetally like umbrella.
    a) **umbel** b) corymb c) capitulum d) spadix
33. In onion flowers are arranged in …… inflorescence.
    a) **umbel** b) corymb c) capitulum d) spadix
34. In …… inflorescence flowers are arranged in acropetal succession.

a) **racemose** b) cymose c) umbel d) spadix

35. Radish have …… type of root.
a) **conical** b) fusiform c) napiform d) prop

36. When fruit is developed from fertilized ovary of a flower then it is called……fruit.
a) **true** b) false c) parthenocarpic d) pseudocarp

37. ……fruit is developed from monocarpellary or polycarpellary syncarpous ovary of single flower.
a) **simple** b) aggregate c) composite d) none of these

38. ……fruit is developed from polycarpellary apocarpous carpel of a flower.
a) simple b) **aggregate** c) composite d) none of these

39. ……fruit is developed from entire inflorescence of a plant..
a) simple b) aggregate c) **composite** d) none of these

40. …… is an example of false fruit.
a) **apple** b) tomato c) brinjal d) mango

41. …… type of fruit is characteristic of family brassicaceae.
a) capsule b) **siliqua** c) caryopsis d) pod

42. Fibrous mesocarp is present in…… fruit.
a) mango b) **coconut** c) apple d) guava

43. Pepo, amphisarca, hesperidium and balausta are types of …… fruit.
a) **berry** b) drupe c) pome d) composite

44. … fruit is developed from hypanthodium inflorescesce.
a) sorosis b**) syconus** c) pome d) berry

45. Presence of caryopsis type of fruit is the diagnostic character of family…….
a) lamiaceae b) **poaceae** c) asteraceae d) moraceae

46. Presence of cremocarp type of fruit is the diagnostic character of family…….
a) lamiaceae b) **apiaceae** c) asteraceae d) moraceae

47. Presence of hesperidium type of fruit is the diagnostic character of family…….
a) lamiaceae b) poaceae c) asteraceae d) **rutaceae**

48. Presence of carcerule type of fruit is the diagnostic character of family…….
a) **lamiaceae** b) poaceae c) asteraceae d) rutaceae

49. Presence of pod/legume type of fruit is the diagnostic character of family…….
a) **fabaceae** b) poaceae c) asteraceae d) rutaceae

50. Generally winged type of fruits are called…….
a) cremocarp b) **samara** c) carcerule d) sorosis

51. Jackfruit is an example of … type of fruit.
a) cyconus b) aggregate c) fleshy d) **sorosis**
52. Fig is an example of … type of fruit.
a) **cyconus** b) aggregate c) fleshy d) sorosis
53……is a dry, dehiscent, one or many seeded fruit that dehisces by single ventral suture.
a) legume b) **follicle** c) siliqua d) capsule
54……is a dry, dehiscent, one or many seeded fruit that dehisces by both dorsal and ventral suture.
a) **legume** b) follicle c) siliqua d) capsule
55. A false septum called replum is present in … type of fruit.
a) **siliqua** b) capsule c) regma d) sorosis
56. Cotton is an example of … type of fruit.
a) **capsule** b) legume c)follicle d) siliqua
57. ……. is an example of dry, indehiscent type of fruit.
a) achene b) caryopsis c) cypsela d) **all of these**
58. ……. is a simple, dry, indehiscent, one seeded fruit with fused pericarp and testa.
a) achene b) **caryopsis** c) cypsela d) samara
59. ……. is a simple, dry, indehiscent, one seeded fruit with separate pericarp and testa.
a) achene b) caryopsis c) **cypsela** d) samara
60. All members of asteraceae.family show ……..type of fruit..
a) achene b) caryopsis c) **cypsela** d) samara
61. Cashew nut is an example of … type of fruit.
a) **nut** b) legume c) follicle d) siliqua
62. ……..type of fruits are considered as an intermediate between dehiscent and indehiscent.
a) simple b) composite c) **schizocarpic** d) aggregate
63. ……are schizocarpic type of fruits.
a) lomentum b) cremocarp c) carcerulus d) **all of these**
64. A fruit of *Acacia* is an example of…… fruits.
a) **lomentum** b) cremocarp c) carcerulus d) regma
65. A fruit of castor and jatropa are an examples of…… fruits.
a) lomentum b) cremocarp c) carcerulus d) **regma**
66. ……are type of fleshy fruits.
a) drupe b) berry c) pome d) **all of these**.
67. ……is edible part of mango fruits.
a) epicarp b) **mesocarp** c) endocarp d) all of these.
68. ……is edible part of mango fruits.
a) epicarp b) **mesocarp** c) endocarp d) all of these.
69.Seeds are the only hard part of …….. fruits.
a) drupe b) **berry** c) syconus d) schizocarpic

70.In …….. fruits endocarp consist of juicy, hair like sacs in its inner surface.

a) pepo b) **hespiridium** c) balausta d) amphisarca

71. Presence of pepo type of fruit is the diagnostic character of family…….

a) rutaceae b) **cucurbitaceae** c) asteraceae d) lamiaceae

72 .In pomegranate….. is edible part of fruits.

a) epicarp b) mesocarp c) endocarp d) **testa of seed**.

73 .In apple….. is edible part of fruits.

a) epicarp b) mesocarp c) endocarp d) **thalamus**.

73 .Etaerio of achene type of fruits are present in……..

a) **clematis** b) rose c) lotus d) all of these

74. Presence of etaerio of berries type of fruit is the diagnostic character of family…….

a) fabaceae b) poaceae c) **annonaceae** d) rutaceae

75 .In *Magnolia* …..type of fruit is present.

a) Etaerio of achene b) **Etaerio of follicles** c) Etaerio of berries d) Etaerio of drupes

76 .Custard apple (*Annona squamosa*) is a ,,,,,,,type of fruit..

a) Etaerio of achene b) Etaerio of follicles c) **Etaerio of berries** d) Etaerio of drupes

77 . Etaerio of drupes type of fruit is present in…….

a) mulberry b) **raspberry** c) strawberry d) pineapple

78. Jackfruit is developed from ……. inflorescesce.

a**) spike** b) catkin c) spadix d) hypanthodium

79. Bentham and Hooker published their work in…….

a) **genera plantarum** b) species plantarum c) kwe bulletin d) encyclopedia of plants

80. Bentham and Hooker classified ……number of plants.

a) 92056 b) **93205** c) 97205 d) 97505

81. Bentham and Hooker classified division phanerogams into ……..classes.

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

82. ……. Used the term herbarium for plants.

a) Linnaeus b) **Tourefort** c) Lam d) de Candolle

83 Acronyme of Central National Herbarium Howrah, Calcutta is…….. .

a) **CAL** b) K c) CNH d) SUK

84 Acronyme of herbarium of Royal Botanical Garden,Kew,England is…….. .

a) CAL b) **K** c) CNH d) SUK

85 …….. .is a virtual herbarium.

a) Central National Herbarium Howrah, Calcutta b) **herbarium of Royal Botanical Garden,Kew,England** c) herbarium of lead botanical garden of Shivaji University d) herbarium of botanical garden.Ooty

86. Lead botanical garden of Shivaji University was funded by…..
a) UGC b) DBT c) **MoEF** d) RUSA

87. The standard size of herbarium sheet is……..cm.
a) 27x43 b) 28x41 c) **29x43** d) 29x40

88. ……..type specimens are hosted at CAL..
a) **20722** b) 19500 c) 20000 d) 50000

89. Herbarium at Royal Botanical Garden Kew (K) comprises more than ….million botanical collection.
a) 2 b) 3 c) 5 d) **8**

90. ……..is known as father of Taxonomy.
a) A. P. deCandolle b) J. D. Hooker c) C. Darwin d) **Carl Linnaeus**

LONG TYPE QUESTIONS:

Q.1. What is meristem? Describe the types of meristems based on their position in plants.
Q.2. What is simple tissue? Describe the different types of simple tissues.
Q.3. What is complex tissue? Describe the xylem and phloem.
Q.4. What is root? Describe the modification of roots.
Q.5. Define stem. Describe the modification of stem.
Q.6. Define flower. Describe the structure of typical flower.
Q.7. Define inflorescence. Describe the types of racemose inflorescence.
Q.8. Define inflorescence. Describe the types of cymose inflorescence.
Q.9. What is fruit? Describe different types of fruits.
Q.10. Define herbaria and add note on its functions.

WRITE NOTES ON:

1. Principals of ICN.
2. Prop roots.
3. Pneumatophores.
4. Storage roots.
5. Rhizome.
6. Corm.
7. Typical flower.
8. Verticillaster.
9. Hypanthodium.
10. Merits and demerits of Bentham and Hooker’s system.
11. Herbarium.
12.CAL.

13. K
14. Parenchyma.
15. Sclerenchyma.
16. Xylem.
17. Phloem.
18. Meristems.
19.Drupe.
20.Berry.

Mahatma Phule Shikshan Sanstha's

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B.Sc. Part- II. Semester IV. 2025-26.

Botany Paper VII: Plant Ecology and Economic Botany

QUESTION BANK

1) Margosa is common name for ----------

a) **Neem** b) Clove

c) Ginger d) Bay leaf

2) The term ecosystem was first coined by-----

a) **A.G. Tansley** b) Ramdeo Mishra

c) Blackwell d) Eugene Odum

3) The concept of 'centre of origin' was proposed by ---------

a) **Vavilov** b) Darwin

c) Candolle d) Mendel

4) Water available to plant is ----------

a) Run off water b) Gravitational water

c) Hygroscopic water d) **Capillary water**

5) ---------- are called producers of the ecosystem.

a) Bacteria b) Animals

c) **Plants** d) viruses

6) ---------- an oil yielding crop.

a) **Soybean** b) Cotton

c) Ragi d) Rubber fig

7) Leaves of ---------- are used as a source of dye.

a) ***Lawsonia inermis*** b) *Azadirachta indica*

c) *Cinnamomum tamala* d) *Coffea Arabica*

8) The network of interconnected food chains is called ----------

a) food chain b) **food web**

c) food group d) food circle

9) Finger millet is commonly called as ----------

a) Rose b) Marigold

c) Mehandi d) **Ragi**

10) The study of soil science is known as ----------

a) Geology b) **Pedology**

c) Pedagogy c) Geography

11) Vavilov gave ---------- centers of origin.

a) 7 b) 6

c) **8** d) 9

12) Bijmata is name given to the ----------

a) Rahibai Lokare b) Rahibai Thombare

c) Rahibai Zambare d) **Rahibai Popere**

13) There are ---------- phytogeographic regions of India.

a) Eight b) Ten

c**) Nine** d) Seven

14) ---------- an fibre yielding crop.

a) Soybean b) **Cotton**

c) Ragi d) Rubber fig

15) Seeds of ---------- are used as a source of beverage.

a) *Lawsonia inermis* b) *Azadirachta indica*

c) *Cinnamomum tamala* d) ***Coffea arabica***

16) A series of organisms arranged in a linear manner with repeated eating is known as ---------

a) **Food chain** b) Food web

c) Food group d) Food circle

17) ---------- is the branch deals with distribution of plants.

a) **Phytogeography** b) Geography

c) Biogeography d) Geology

18) Animals are the ---------- of an ecosystem.

a) Producers b) **consumers**

c) decomposers d) none of the above

19) Aloe gel is extracted from the ----------

a) root b) flower

c) **leaf** d) seed

20) Size of gravel soil particles is ----------

a) 0.2 mm b) **larger than 2.0 mm**

c) 0.02 mm d) smaller than 0.002

21) Leaves of ---------- are used as a source of condiment.

a) *Lawsonia inermis* b) *Azadirachta indica*

c) ***Cinnamomum tamala*** d) *Coffea Arabica*

22) Pyramid of energy is always ----------

a) **upright** b) inverted

c) horizontal d) flat

23) The process of transformation of solid rocks into soil is known as----------

a) exfoliation b) carbonation

c) **weathering** d) humification

24) Dried leaves of ---------- possess insecticidal properties.

a) *Eleusine coracana* b) ***Azadirachta indica***

c) *Tectona grandis* d) *Lawsonia inermis*

Q. 2. Long Answer Type Questions

1) What is food chain? Explain the different trophic levels of the food chain with example.

2) Give botanical name, plant parts used and economic importance of finger millet.

3) Describe composition of soil. Add a note on soil profile.

4) Describe phytogeographical regions of India as per Chatterjee.

5) Give botanical name, plant parts used and economic importance of Neem

6) Describe ecological pyramids with suitable diagrams.

7) Give botanical name, plant parts used and economic importance of Soybean

8) Describe Vavilo's centre of origin.

9) Give botanical name, plant parts used and economic importance of Rubber fig.

Q. 3. Write notes on.

1) Grassland ecosystem.

2) Food web.

3) Pyramid of biomass.

4) Importance of water.

5) Cosmetic plant-*Aloe*.

6) Seed bank.

7) Grassland ecosystem

8) Importance of germplasm conservation

9) Food web

10) Pyramid of number

11) Economic importance of *Aloe*.

12) Composition of soil

13) Lake ecosystem.

14) Food chain.

15) Pyramid of number.

16) Formation of soil.

17) Beejmata.

18) Economic importance of Finger millet.

Mahatma Phule Shikshan Sanstha's

Karmaveer Bhaurao Patil College, Urun-Islampur

2025-26

Question Bank

B.Sc. (Part - I) (Semester-II) (NEP)

Subject Name: Botany paper IV (DSC-14B) Archaegoniatae (Bryophytes, Pteridophytes and Gymnosperms)

Multiple choice questions

1. Gnetum ovule consists of …… integuments.

a) 1 b) 2 c)3 d) 4

2. Archegoniatae is originated from ……..

a) Aquatic green algae b) Bryophytes c) Pteridophytes d) bacteria

3. the term alternation of generation is introduced by……..

a) b) c) d)

4. Bryophytes are called as ……..

a) plant wealth b) plant amphibians c) parasites d) ferns

5. Bryophytes are classified in …….. classes.

a) 1 b) 2 c)3 d) 4

6. in case of bryophytes plant body is ……..

a) thalloid b) leafy c) tall d) complex

7. In case of *Anthoceros*, sporophyte is ……..

a) independent b) Dependent c) partly dependent partly independant d) absent

8. In case of *Anthoceros* sporophyte seta is …….

a) present b) small c) large d) absent

9. In case of Anthoceros mucilage cavities consists of ……

a) viruses b) *Noctoc* c) fungi d) none of these

10. As per G. M. Smith pteridophytes are classified in to …… divisions.

a) 1 b) 2 c)3 d) 4

11. ……. is used as biofertilizer.

a) *Anthoceros* b) *Azolla* c) *Selaginella* d) *Pteris*

12. The reproductive structures in *Selaginella* are in the form of ……

a) cones b) flowers c) cluster d) Strobilli

13. Heterospory is observed in ……

a) *Selaginella* b) *Anthoceros* c) *Pteris* d) algae

14. *Selaginella* belongs to class……

a) fungi b) hepaticopsida c) lycopodinae d) gnetopsida

15. Gymnosperms are classified into …… classes

a) 1 b) 2 c)3 d) 4

16. *Gnetum* belongs to class …….

a) Pteridophytes b) Algae c) hepatocapsida3 d) Gnetopsida

17. Ovule in *Gnetum* is ……..

a) Orthotropous b) Anatropous c) Campylotropous d) None of these

Long questions:

1. Discuss general characters of bryophytes
2. Give an account on classification of Bryophytes.
3. Describe the structure and peculiarities of sporophyte in *Anthoceros*
4. Describe classification of pteridophytes.
5. Describe morphology and anatomy of *Selaginella*.
6. Give an account on general characters in gymnosperms.
7. Describe anatomy in *Gnetum*.
8. Describe male and female reproductive structures in *Gnetum*.
9. Give an account on interrelationship between pteridophytes and gymnosperms.

Short notes:

1. Transition to land plants
2. Ecological importance of bryophytes
3. Economic importance of Bryophytes
4. Internal structure of *Anthoceros* thallus.
5. Vegetative reproduction in *Anthoceros*.
6. General characters of pteridophytes
7. Structure of strobulli in *Selaginella*.
8. Heterospory and seed habit in pteridophytes.
9. Economic importance of pteridophytes.
10. Ovule structure in *Gnetum*.
11. Anthridium in *Anthoceros*.
12. Stem anatomy in *Selaginella*.

Mahatma Phule Shikshan Sanstha's

Karmaveer Bhaurao Patil College, Urun-Islampur

Department of Botany
2025-26
Question Bank

Shivaji University, Kolhapur
B.Sc. I (Semester-I) (NEP)
Botany
Paper - II (DSC-14A) (Cell biology)

Rewrite the sentences by choosing correct alternative

1. ….. is absent in animal cells and present in a plant cell.

(a) Cell wall (b) Cytoplasm (c) Vacuoles (d) Mitochondria

2. ……..does not contain DNA.

(a) Nucleus (b) Lysosomes (c) Chloroplast (d) Mitochondria

3. …….is true about the cell wall.

(a) The cell wall is mainly composed of lipid (b) The cell wall is mainly composed of starch

(c) The cell wall is mainly composed of protein (d) The cell wall is mainly composed of cellulose

4. …….. is called the powerhouse of the cell.

(a) Nucleus (b) Lysosomes (c) Chloroplast (d) Mitochondria

5. …….. regulates the entry and exit of molecules to and from the cell.

(a) Lysosomes (b) Golgi bodies (c) Cell membrane (d) Mitochondria

6. …… is called a suicidal bag.

(a) Lysosomes (b) Golgi bodies (c) Cell membrane (d) Mitochondria

7. …….. helps in gathering and focusing light rays on the specimen to be viewed in compound microscope.

a) Eyepiece lens b) Objective lens c) Condenser lens d) Magnifying lens

8. …….. is absent in prokaryotic cells.

a) True Nucleus b) DNA c) cell membrane d) mesosomes

9. In plants mitosis takes place in ……..

a) all cells b) somatic cells c) reproductive cells d) Cambium

10. As a product of meiosis…….. cells are formed

a) one b) two c) three d) four

11. In electron microscope ……. is used as a source of illumination.

a) sunlight b) UV c) infra red d) electron beam

12. …… is a separation techniques.

a) microscopy b) preservation c) chromatography

Long Questions:

1) Explain ultra-structure of cell wall.
2) Define mitosis and explain phases of mitosis with suitable diagrams.
3) Write working principle and important parts of compound light microscope with the help of diagram
4) Give comparative account on prokaryotic and eukaryotic cells.
5) Explain structure and functions of cell membrane.
6) What is meiosis? Explain its process.

Short notes:

A) Significance of meiosis.
B) Structure of lysosome.
C) Structure of mitochondria.
D) Structure of simple light microscope.
E) Role of cell membrane.
F) Structure of prokaryotic cell.
G) Cell cycle.
H) Mitosis
I) Endoplasmic reticulum
J) Microbodies

Mahatma Phule Shikshan Sanstha's

Karmaveer Bhaurao Patil College, Urun-Islampur

2025-26

Department of Botany

Question Bank

Shivaji University, Kolhapur

B.Sc. II (Semester-III) Botany

Paper - VI (DSC-C14) (Genetics and Molecular Biology)

1. The distance between two genes is measured in ……
2. Mendel conducted his experiments on ……plant.
3. …… indicates the external appearance of an organism.
4. Two strands of DNA are …… to each other.
5. Crossing over results in …….
6. DNA replication occurs in ……phase of cell cycle.
7. On mRNA initiation codon is …….
8. ……..is called as father of genetics
9. RNA present in ribosomes are called ……
10. Z-DNA consist of …….base pairs per turn.
11. Presence of ribose sugar is characteristic of ……
12. ….. are building blocks of nucleic acids

Long Questions.

1. What is linkage? Explain any one type of linkage.
2. State law of segregation and explain it with suitable example
3. Describe Watson and Crick's model of DNA with suitable diagram
4. Define central dogma of molecular biology and explain it in brief.
5. Explain DNA replication. Add a note on enzymes involved in the process of DNA replication.
6. Explain chromosome theory of inheritance
7. What is crossing over? Elaborate its mechanism.
8. Explain the structure of mRNA.

Short notes.

1. Replication of DNA
2. Significance of nucleic acids
3. Law of dominance
4. Significance of crossing over
5. Central dogma of molecular biology
6. Translocation
7. t- RNA
8. Genetic code