6. REPRODUCTION IN PLANTS
TEACHING TASK

1. The function of suspensor of the embryo is
   A) Absorption of nutrients B) Formation of secondary embryos
   C) Pushing the embryo in to the nutritive tissue D) All the above

Correct Answer: (C) Pushing the embryo into the nutritive tissue
Explanation: The suspensor helps position the developing embryo properly within the seed.

2. The first division of zygote in dicots and monocots in normally
   A) Transverse B) Longitudinal C) Oblique D) Meiotic

Correct Answer: (A) Transverse
Explanation: The zygote typically divides transversely to form basal and apical cells.

3. Polyembryony was first reported in
   A) Citrus B) Mango C) Cocos D) Opuntia

Correct Answer: (D) Opuntia
Explanation: Polyembryony (multiple embryos) was first observed in Opuntia species.

4. The lower cell of suspensor lying above the embryonal cell (apical cell) during embryogeny in dicot is
   A) Haustorial cellB) Hypophysis C) Hypocotyl D) epiblast

Correct Answer: (B) Hypophysis
Explanation: The hypophysis gives rise to parts of the root system.

5. The word scutellum refers to
   A) Embryo of dicot B) Embryonic shoot of monocot embryo
   C) Outer most layer of endosperm in cereals
   D) cotyledon of monocot embryo

Correct Answer: (D) cotyledon of monocot embryo
Explanation: Scutellum is the single cotyledon in monocots that absorbs nutrients.

6. Remains of second cotyledon which occurs in some grasses is called
   A) Coleoptile B) Hypophysis C) epiblast D) Scutellum

Correct Answer: (C) epiblast
Explanation: Epiblast is a vestigial second cotyledon in some grasses.

7. The term “Tigellum” refers to
   A) Axis of the embryo
   B) Part of embryonal axis below the cotyledonary node
   C) Part of the embryonal axis above the cotyledonary node
   D) Upper cell of suspensor of dicot embryo

Correct Answer: (A) Axis of the embryo
Explanation: Tigellum is the main embryonic axis including plumule and radicle.

8. Which of the following is generally considered as artificial method of vegetative rolongation
   A) Cutting B) Layering C) Grafting D) All the above

Correct Answer: (D) All the above
Explanation: Cutting, layering and grafting are all artificial propagation methods.
9. Nuclear or cellular nature of endospenrm can be known at a stage
A) Mature B) Cordate stage of embryo
C) Beginning of divisions in embryo D) Following division of primary endosperm
Correct Answer: (D) Following division of primary endosperm nucleus
Explanation: Endosperm development begins after primary endosperm nucleus division.
10. Perisperm is
A) Outer part of embryosac B) Degenerate synergid
C) Degenerate secondarynucleus D) Remains of nucellus
Correct Answer: (D) Remains of nucellus
Explanation: Perisperm is persistent nucellus tissue in some seeds.
11. Development of seedless fruit in an unfertilized flower is called
A) Parthenocarpy B) sporophytic budding
C) PolyembryonyD) Micropropagation
Correct Answer: (A) Parthenocarpy
Explanation: Parthenocarpy produces fruits without fertilization.
12. Fusion of a male gamete with egg in embryo sac is
A) Autogamy B) Syngamy
C) Double fertilization D) Triple fusion
Correct Answer: (B) Syngamy
Explanation: Syngamy refers specifically to egg-sperm fusion.
13. Identify the wrong statement regarding post fertilization development
A) Ovary wall develops into pericarp
B) Outer integument of ovule develops into tegmen
C) Fusion nucleus (Triple nucleus) develops into endosperm
D) Ovule develops into seed
Correct Answer: (B) Outer integument of ovule develops into tegmen
Explanation: Outer integument becomes testa, inner becomes tegmen.
14. During development of male gametophyte from pollen mother cell, there occurs
A) Two meiotic divisions and one mitotic division
B) Two mitotic divisions C) One meiotic and two mitotic divisions
D) One meiotic cell division and one mitotic cell division
Correct Answer: (C) One meiotic and two mitotic divisions
Explanation:PMC , meiosis , microspores , mitosis , 2-celled pollen , mitosis , 3-celled.
15. Pericarp of fruit develops from
A) Wall of ovary B) Nucellus C) Funicle D) Seed coat
Correct Answer: (A) Wall of ovary
Explanation: Pericarp forms from ovary wall layers.
16. Embryo sac develops from megaspore mother cell through
A) 1 meiosis and 2 mitosis B) 1 meiosis and 3 mitosis
C) 2 meiosis and 2 mitosis D) 2 meiosis and 3 mitosis
Correct Answer: (B) 1 meiosis and 3 mitosis

Explanation: MMC , meiosis , megaspore , 3 mitoses , 8-nucleate sac.

17. What statement is true about microspore of angisperms
    A) Resultant of mitotic division B) First cell of gametophytic generation
    C) Resultant of double fertilization D) First cell of endosperm

Correct Answer: (B) First cell of gametophytic generation

Explanation: Microspores begin the male gametophyte phase.

18. Which one is surrounded by cellulose wall
    A) Male gamete B) pollen grain C) Egg D) Microspore tetrads

Correct Answer: (D) Microspore tetrads

Explanation: Tetrads have callose walls, others have different wall types.

19. Doulbe fertilization and triple fusion were discovered by
    A) Hofmeister B) Nawaschin and Guignard
    C) Leeuwenhoek D) Strasburger

Correct Answer: (B) Nawaschin and Guignard

Explanation: They discovered these processes in 1898-1899.

20. Parthenocarpic fruits are produced by
    A) Treating plants with phenyl mercuric acetate
    B) Treating plants with low concentrations of gibberellic acid and auxin
    C) Removing androecium of flowers before release of pollen grains
    D) Raising plants from vernalised seeds.

Correct Answer: (B) Treating plants with low concentrations of gibberellic acid and auxin

Explanation: Hormone treatments can induce parthenocarpy.

21. Cleistogamous flowers are
    A) Wind pollinated B) Insect pollinated C) Bird pollinated D) Self pollinated

Correct Answer: (D) Self pollinated

Explanation: Cleistogamous flowers never open, ensuring selfing.

22. In angiosperm ovule, central cell of embryo sac, prior to entry of pollen tube, contains
    A) Two haploid secondary nuclei B) One diploid secondary nucleus
    C) Single haploid nucleus D) One diploid and one haploid nuclei

Correct Answer: (B) One diploid secondary nucleus

Explanation: Two polar nuclei fuse to form diploid secondary nucleus.

23. Phenomenon of polyembryony was first observed in
    A) Citrus B) Cucurbita C) Mangifera D) Euphorbia

Correct Answer: (A) Citrus

Explanation: First reported in Citrus by Leeuwenhoek (1719).

24. In angisperms, endoperm is formed by
    A) Division of fused polar nuclei
    B) Free nuclear division of megaspore
    C) Division of fused synergids and male gamete
    D) Division of fused polar nuclei and male gamete

Correct Answer: (D) Division of fused polar nuclei and male gamete

Explanation: Triple fusion product (2 polar + 1 sperm) forms endosperm.

25. Endosperm/endosperm nucleus of angiosperms is generally

A) Haploid B) Diploid C) Triploid D) Tetraploid

Correct Answer: (C) Triploid

Explanation: Results from fusion of two polar nuclei (2n) + sperm (n).

26. Pollen grains are shed at

A) One-celled stage B) 2-3 celled stage C) 3-celled stage D) 4- celled stage.

Correct Answer: (B) 2-3 celled stage

Explanation: Most angiosperms shed pollen at 2-celled (vegetative + generative) or 3-celled stage.

27. Function of suspensor of embryo is

A) Absorptionf nourishment

B) Push the embryo into nutritive endosperm region

C) Formation of secondary embryos

D) All the above

Correct Answer: (D) All the above

Explanation: Performs multiple roles including nourishment and positioning.

28. Pollen tube discharges its male gametes into

A) Egg B) Healthy synergid

C) Degenerating synergid D) Central cell

Correct Answer: (C) Degenerating synergid

Explanation: Tube enters through degenerating synergid to release sperms.

29. During double fertilization, pollen tube enters embryo sac

A) By penetrating egg B) Through one of the synergids

C) By destroying antipodal D) Between synergid and central cell

Correct Answer: (B) Through one of the synergids

Explanation: Synergid guides tube entry and degenerates.

30. Fibrous thickening of hygroscopic nature are found in this part of anther

A) Epidermis B) Tapeturm C) Middle layer D) endothecium

Correct Answer: (D) endothecium

Explanation: Endothecium has hygroscopic thickenings for anther dehiscence.

31. Double fertilization results in production of

A) Haploid nucleus B) Diploid nucleus

C) Triploid nucleus D) tetraploid nucleus

Correct Answer: (B) Diploid nucleus

Explanation: Syngamy (egg + sperm) produces diploid zygote. (Note: Also produces triploid endosperm nucleus via triple fusion)

32. In a type of apomixes known as adventitive embryony, embryos develp directly from

A) Nucellus or integument B) Zygote

C) Synergids or antipodals of embryo sac D) Accessory embryo sacs in the ovule.

Correct Answer: (A) Nucellus or integument

Explanation: Embryos arise from somatic cells of ovule tissues.

33. Double fertilization involves

A) Fertilization of egg by two male gametes

B) Fertilization of two sperms brought by one pollen tube

C) Fertilization of the egg and the central cell by two sperms brought by the same pollen tube

D) Fertilization of the egg and the central cell by two sperms brought by two different polentubes.

Correct Answer: (C) Fertilization of the egg and the central cell by two sperms brought by the same pollen tube

Explanation: One sperm fertilizes egg (zygote), other fuses with polar nuclei (endosperm).

34. For self pollination, a flower should be

A) A sexual B) Monosexual C) Unisexual D) Bisexual

Correct Answer: (D) Bisexual

Explanation: Requires both male and female reproductive organs.

35. Arrangement of nuclei in normal dicot embryo sac is

A) 3+3+2 B) 2+4+2 C) 3+2+3 D) 2+3+3

Correct Answer: (C) 3+2+3

Explanation:3 antipodals + 2 synergids + 3 (egg + 2 polar nuclei).

36. Milky water of green coconut is

A) Liquid chalaza B) Liquid nucellus

C) Liquid endosperm D) Liquid female gametophyte

Correct Answer: (C) Liquid endosperm

Explanation: Nutritive tissue for developing embryo.

37. A diploid female plant is crossed with tetraploid male plant. The ploidy of endosperm will be

A) Tetraploidy B) Pentaploidy C) Triploidy D) Diploidy

Correct Answer: (B) Pentaploidy

Explanation: 2n female × 4n male --> 3n embryo + 5n endosperm (2 polar nuclei [4n] + sperm [n]).

38. In oogamy, fertilization occurs between

A) Small nonmotile female gamete and large motile male gamete

B) Large nonmotile female gamete and small motle male gamete

C) A large nonmotile female gamete and small nonmotile male gamete

D) A large motile female gamete and a small nonmotile male gamete.

Correct Answer: (B) Large nonmotile female gamete and small motile male gamete

Explanation: Typical of all seed plants and many algae.

39. Fragrant flowers with well developed nectarines are an adaptation for

A) Zoophily B) Anemophily C) Entomophily D) Hydrophily

Correct Answer: (C) Entomophily

Explanation: Attract insect pollinators.

40. During formation of pollen grains, a microscope mother cell undergoes

A) One meiotic division B) One mitotic division

C) One meiotic and one mitotic division

D) One meiotic and two mitotic divisions

Correct Answer: (D) One meiotic and two mitotic divisions

Explanation: PMC --> meiosis --> microspores --> mitosis --> 2-celled pollen --> mitosis --> 3-celled.

41. Pollen grains are able to tolerate extremes of temperature and desiccation because their exine consists of

A) Cutin B) Suberin C) sporopollenin D) Callose

Correct Answer: (C) sporopollenin

Explanation: Most chemically resistant biological compound.

42. Plant part having tow generations, one within the other is

A) Seed B) Germinated pollen grain C) Embryo D) Unfertilsed ovule

Correct Answer: (B) Germinated pollen grain

Explanation: Contains male gametophyte (haploid) within sporophyte tissue (diploid wall).

43. Wind pollinated flowers are

A) small, scented and colourless B) Small, nonscented and colourless

C) Big, scented and colourless D) Big, nonscented and colourless

Correct Answer: (B) Small, nonscented and colourless

Explanation: Lack showy adaptations needed for animal pollinators.

44. Vegetative fertilization, which involves formations of endosperm, is fusion of

A) One male gamete with diploid secondary nucleus

B) Two vegetative cells C) Two male gameties

D) Female gamete with secondary nucleus

Correct Answer: (A) One male gamete with diploid secondary nucleus

Explanation: Triple fusion (2 polar nuclei + 1 sperm).

45. Number of prothallial cells present in male gametophyte of flowering plants is

A) Three B) Two C) One D) zero

Correct Answer: (D) zero

Explanation: Reduced compared to gymnosperms which have 2-3.

46. If meiosis occurs inside pollen grain, it will be

A) Zygotic meiosis B) Gametic meiosis C) Sporic meiosis D) None of the above

Correct Answer: (B) Gametic meiosis

Explanation: Meiosis producing gametes directly (like in animals).

47. Pollen grains are non green due to

A) Absence of plastids B) Degeneration of plastids

C) Conversion of plastids D) Attraction of vectors

Correct Answer: (B) Degeneration of plastids

Explanation: Chloroplasts convert to less differentiated amyloplasts.

48. Which is wrong

A) Seed cannot be formed after one fertilization

B) Seed is formed after one fertilization

C) Seeds is formed without double fertilization

D) Fruit is produced after double fertilization

Correct Answer: (B) Seed is formed after one fertilization

Explanation: Requires both syngamy (embryo) and triple fusion (endosperm).

49. Filiform apparatus occurs in

A) Synergids B) Secondary nucleus C) Antipodals D) Egg nucleus

Correct Answer: (A) Synergids

Explanation: Guides pollen tube entry.

50. In which of the following plant pollen grains cause pollen allergy and leads to asthma, bronchitis

A) Solanum surathines B) Atropa belladona
C) Parthenium hysterophorus D) Digitalis purpurea

Correct Answer: (C) Parthenium hysterophorus

Explanation: Common allergenic weed (congress grass).

51. From which part of the plant can gardeners take cuttings to produce new plants?

a) Flowers b) Leaves c) Roots d) Fruits

Correct Answer: (c) Roots

Explanation: Stem/leaf cuttings more common but root cuttings possible.

52. What type of underground storage structure do onions and tulips grow from?

a) Tubers b) Rhizomes c) Bulbs d) Runners

Correct Answer: (c) Bulbs

Explanation: Underground storage organs with fleshy leaves.

53. How do gardeners typically propagate plants using the cutting method?

a) By placing a piece of the fruit in soil
b) By taking a section of the flower and planting it
c) By placing a stem or leaf in soil or water
d) By burying a section of the root underground

Correct Answer: (c) Placing a stem or leaf in soil/water

Explanation: Most common vegetative propagation method.

54. What is parthenogenesis?

a) Regeneration of lost body parts b) Reproduction through budding
c) Reproduction without fertilization d) Reproduction through fragmentation

Correct Answer: (c) Reproduction without fertilization

Explanation: Development from unfertilized egg.

55. Which animals can reproduce without fertilization?

a) Worms b) Coral c) Planarians
d) Certain species of insects, reptiles, and fish

Correct Answer: (d) Certain insects, reptiles, and fish

Explanation:e.g., aphids, whiptail lizards, some sharks.

56. What happens when a small bud forms on the parent organism and eventually detaches to become a new individual?

a) Regeneration b) Fragmentation c) Parthenogenesis d)Budding

Correct Answer: (d) Budding

Explanation: Asexual reproduction seen in yeast, hydra etc.

LEARNERS TASK

1. This is a character of flower.

A) Presence of condensed axis B) Showing limited growth
C) Taking part in sexual reproduction D) All of the above

Correct Answer: (D) All of the above

Explanation: Flowers have condensed axis (receptacle), limited growth, and function in sexual reproduction.

2. The idea that flower is a modified shoot was expressed by

A) Linnaeus B) Gaspard Bauhin C) de Candolle & Goethe D) All of them

Correct Answer: (C) de Candolle & Goethe

Explanation: Proposed the "foliar theory" of floral parts

3. Torus is

A) Axis of flower B) Stalk of flower C) Axis of the plant D) All

Correct Answer: (A) Axis of flower

Explanation: The thalamus/receptacle bearing floral parts.

4. The total number of sets of floral leaves present in a normal flower is

A) Four B) One C) Three D) Two

Correct Answer: (A) Four

Explanation: Calyx, corolla, androecium, and gynoecium.

5. The first and second whorls of the flower respectively consist of

A) Calyx, Androecium B) Corolla, Calyx

C) Corolla, Androecium D) Calyx, Corolla

Correct Answer: (D) Calyx, Corolla

Explanation: Outermost whorl is calyx, followed by corolla.

6. Both calyx and corolla together known as

A) Perianth B) Chlamydeon C) Non-essential organs D) All of them

Correct Answer: (D) All of them

Explanation: Perianth (collective term), chlamydeon (old term), and non-essential organs.

7. Essential organs of the flower are present in one of the following whorls.

A) Calyx, Androecium B) Corolla, Calyx

C) Gynoecium, Androecium D) Gynoecium, Corolla

Correct Answer: (C) Gynoecium, Androecium

Explanation: Reproductive organs (stamens and carpels).

8. A bisexual flower is

A) Complete B) Incomplete

C) Usually incomplete rarely complete D) Complete or incomplete

Correct Answer: (D) Complete or incomplete

Explanation: Bisexual means having both sexes, unrelated to completeness (all four whorls).

9. Microsporophyll is commonly known as

A) Stamen B) Carpel C) Petal D) Sepal

Correct Answer: (A) Stamen

Explanation: Leaf-like structure bearing microsporangia.

10. A dithecous anther has

A) Two lobes B) Two microsporangia C) Two filaments D) Two anthers

Correct Answer: (A) Two lobes

Explanation: Each lobe contains two microsporangia (total four).

11. Monothecous anthers are seen in

A) *Cassia* B) *Datura* C) *Hibiscus* D) *Argemone*

Correct Answer: *(C) Hibiscus*

Explanation:*Malvaceae family members typically have monothecous anthers.*

12. In an angiospermic plant flowers are developed on

A) Male gametophyte B) Thalamus C) Sporophyte D) Female gametophyte

Correct Answer: (C) Sporophyte

Explanation: Flowers are sporophytic structures.

13. In angiosperms meiotic division takes place in
    A) Zygote B) Spore mother cells C) Gamete mother cells D) All

Correct Answer: (B) Spore mother cells

Explanation: Both microspore and megaspore mother cells undergo meiosis.

14. One of the following is developed from nucellus.
    A) Male gamete B) Female gamete C) Zygote D) Megaspore mother cell

Correct Answer: (D) Megaspore mother cell

Explanation: Arises from nucellar tissue within ovule.

15. The haploid structures in the life cycle of angiosperms is
    A) Microspores B) Megaspores C) Male gametophyte D) All

Correct Answer: (D) All

Explanation: Microspores, megaspores, and gametophytes are all haploid.

16. In angiosperms the adult sporophyte is directly formed from
    A) Microspore B) Megaspore C) Zygote D) Embryo

Correct Answer: (C) Zygote

Explanation: Zygote develops into embryo --> sporophyte.

17. In angiosperms the seed contains
    A) Zygote B) Seed ling C) Embryo D) Female gametophyte

Correct Answer: (C) Embryo

Explanation: Mature embryo is the young sporophyte.

18. Pollen grains are also known as
    A) Microspores B) Megaspores
    C) Microspore mother cell D) Megaspore mother cell

Correct Answer: (A) Microspores

Explanation: Male spores produced by meiosis.

19. The number of pollen sacs preset in a dithecous anther is
    A) Two B) One C) Three D) Four

Correct Answer: (D) Four

Explanation: Two sacs per theca (2×2=4).

20. Male gametes are formed by
    A) Pollen grains B) Megaspores C) Tapetum D) Connective

Correct Answer: (A) Pollen grains

Explanation: Generative cell in pollen produces sperms.

21. This is not an integral part of anther wall
    A) Sporogenous tissue B) Tapetum C) Middle layers D) Epidermis

Correct Answer: (A) Sporogenous tissue

Explanation: It develops into pollen, not part of wall layers.

22. Stomium is an integral part of
    A) Middle layers B) Tapetum C) Endothecium D) Epidermis

Correct Answer: (D) Epidermis

Explanation: Thin-walled region for anther dehiscence.

23. Microspore mother cells show meiosis during the degeneration of
    A) Tapetum B) Endothecium C) Stomium D) Middle layers

Correct Answer: (D) Middle layers

Explanation: Middle layers degenerate as meiosis occurs.

24. Fibrous thickenings are present in
    A) Endothecium B) Tapetum C) Epidermis D) Middle layers

Correct Answer: (A) Endothecium

Explanation: Hygroscopic thickenings aid anther opening.

25. This is multilayered structure of anther wall
    A) Middle layers B) Tapetum C) Endothecium D) Epidermis

Correct Answer: (A) Middle layers

Explanation: Usually 1-3 cell layers thick.

26. This is hygroscopic structure of anther.
    A) Tapetum B) Endothecium C) Middle layers D) Tapetum

Correct Answer: (B) Endothecium

Explanation: Fibrous thickenings absorb moisture for dehiscence.

27. This structure of anther wall helps in the breakage of anther.
    A) Endothecium B) Tapetum C) Middle layers D) Epidermis

Correct Answer: (A) Endothecium

Explanation: Its hygroscopic nature causes uneven drying and rupture.

28. These cells show contraction during the breakage of anther.
    A) Tapetum B) Endothecium C) Middle layers D) Epidermis

Correct Answer: (C) Middle layers

Explanation: Their degeneration creates tension.

29. The innermost layer of anther wall is called as
    A) Tapetum B) Endothecium C) Middle layers D) Epidermis

Correct Answer: (A) Tapetum

Explanation: Nourishes developing pollen.

30. It is the nutritive tissue of anther wall.
    A) Endothecium B) Tapetum C) Epidermis D) Middle layers

Correct Answer: (B) Tapetum

Explanation: Provides nutrients to microspores.

31. Radially elongated cells are present in
    A) Epidermis B) Tapetum C) Middle layers D) Endothecium

Correct Answer: (B) Tapetum

Explanation: Characteristic secretory tapetum cells.

32. Meiosis takes place in one of the following cells
    A) Microspores B) All sporogenous cells
    C) Microspore mother cells D) Tapetal cells

Correct Answer: (C) Microspore mother cells

Explanation: Produce haploid microspores.

33. Nucellar cells surrounding the embryosac start dividing and protrude into the embryosac and develop in the embryos in
    A) Coconut,Mango B) Citrus,Mango
    C) Cinchona.Mangifera D) Annona,Citrus,Mango

Correct Answer: (D) Annona,Citrus,Mango

Explanation: Exhibit nucellar polyembryony.

34. The usual shape of pollen grain is
    A) Spherical or thread like B) Spherical or oval
    C) Spherical or rectangular D) Triangular or oval

Correct Answer: (B) Spherical or oval
Explanation: Most common shapes, though some are elongated.
35. Pollen grain wall is
A) Single layered B) Double layered C) Triple layered D) Four layered
Correct Answer: (B) Double layered
Explanation: Exine (outer) and intine (inner).
36. Exine is chemically made of
A) Protein B) Sporopollenin C) Carbohydrate D) Glycolipid
Correct Answer: (B) Sporopollenin
Explanation: Highly resistant organic polymer protecting pollen.
37. Intine is chemically made of
A) Pectin B) Cellulose C) Pectin and Cellulose D) Lignin
Correct Answer: (C) Pectin and Cellulose
Explanation: Inner wall composed mainly of these carbohydrates.

38 Germ pores are seen in
A) Exine B) Intine
C) Sometimes in exine and sometimes in intine D) None of them
Correct Answer: (A) Exine
Explanation: Thin areas in exine for pollen tube emergence.
39. The first cell of male gametophyte of angiosperms is
A) Megaspore B) Pollen grain C) Male gametophyte D) Female gametophyte
Correct Answer: (B) Pollen grain
Explanation: Represents the immature male gametophyte.
40. The first division in the microspore is
A) Equal, anticlinal B) Unequal, Anticlinal
C) Equal, Periclinal D) Unequal, Periclinal
Correct Answer: (D) Unequal, Periclinal
Explanation: Produces large vegetative cell and small generative cell.
41. Pollen tube is formed by
A) Exine B) Intine C) Both Exine & Intine D) Plasma membrane
Correct Answer: (B) Intine
Explanation: Grows out through germ pore using intine material.
42. Fully developed male gametophyte of angiosperms has
A) 2-cells B) 3-cells C) 5-cells D) Several cells
Correct Answer: (B) 3-cells
Explanation:1 vegetative cell + 2 sperm cells (in 70% species).
43. Pollen enters into the embryosac through
A) Egg cell B) Antipodals C) Synergid D) Central cell
Correct Answer: (C) Synergid
Explanation: One synergid degenerates to guide tube entry.
44 The point of attachment of funicle with the ovule body is called as
A) Hilum B) Strophiole C) Raphe D) Integument
Correct Answer: (A) Hilum
Explanation: Scar-like attachment region.
45 The ridge present between the funicle and the body of the ovule is called as

A) Raphe B) Hilum C) Strophiole D) Nucellus

Correct Answer: (A) Raphe

Explanation: Formed when ovule is inverted (anatropous).

46. The region of the ovule where the lateral side of integuments and the funicle are united is called as

A) Micropyle B) Chalaza C) Nucellus D) Raphe

Correct Answer: (D) Raphe

Explanation: Fusion line in anatropous ovules

47. Meiosis occurs during the following phenomenon of plants.

A) Embryogenesis B) Megasporangiogenesis

C) Megasporogenesis D) Nucellogenesis

Correct Answer: (C) Megasporogenesis

Explanation:MMC --> meiosis --> megaspores

48. Megaspores of a tetrad are arranged in this manner.

A) Tetrahedral B) Decussate C) Isobilateral D) Linear

Correct Answer: (D) Linear

Explanation: Most common arrangement in angiosperms.

49. One of the following events does not occur during divisions in functional megaspore.

A) Karyokinesis B) Metaphase C) Telophase D) Cytokinesis

Correct Answer: (D) Cytokinesis

Explanation: Free nuclear divisions occur initially.

50. The total number of generations of nuclear divisions that occur during the formation of embryosac from megaspore is

A) Three B) Four C) Five D) Two

Correct Answer: (A) Three

Explanation:1 nucleus --> 2 --> 4 --> 8 nuclei.

51. Embryosac is

A) Two nucleated stage of megaspore

B) Four nucleated stage of megaspore

C) Single nucleated stage of megaspore

D) Eight nucleated stage of megaspore

Correct Answer: (D) Eight nucleated stage of megaspore

Explanation: Mature sac has 8 nuclei (7 cells).

52. Secondary nucleus of embryosac is fusion product of

A) Synergids B) Antipodals C) Polar nuclei D) Megaspores

Correct Answer: (C) Polar nuclei

Explanation: Typically two nuclei (may vary).

53. The female gametophyte of angiosperms is

A) 7-celled, 8-nucleated B) 8-celled, 8-nucleated

C) 7-celled, 7-nucleated D) 8-celled, 9-nucleated

Correct Answer: (A) 7-celled, 8-nucleated

Explanation:3 antipodals + 2 synergids + 1 egg + 1 central cell (2 nuclei).

54. Presence of filiform apparatus is a feature of

A) Antipodals B) Synergids C) Central cell D) Egg cell

Correct Answer: (B) Synergids

Explanation: Finger-like projections guiding pollen tube.

55. The structure of embryosac of angiosperms that helps in absorption and conduction of food materials from nucellus is

A) Antipodals B) Synergids C) Egg cell D) Central cell

Correct Answer: (B) Synergids

Explanation: Transfer nutrients from nucellus.

56. The function of filiform apparatus of synergids is

A) Guiding the pollen tube into the embryosac

B) Absorption of food materials from the nucellus

C) Conduction of food materials into the embryosac D) All the above

Correct Answer: (A) Guiding pollen tube

Explanation: Secretes chemotropic substances.

57. The smallest cell/s of embryosac are/is

A) Synergid B) Central cell C) Antipodals D) Egg cell

Correct Answer: (C) Antipodals

Explanation: Three small cells at chalazal end.

58. These cells of embryosac perish even before fertilization.

A) Synergids B) Egg cell C) Central cell D) Antipodals

Correct Answer: (D) Antipodals

Explanation: Often degenerate early.

59. Vegetative cells of embryosac are

A) Synergids B) Egg apparatus C) Antipodals D) Central cells

Correct Answer: (C) Antipodals

Explanation: Non-reproductive cells.

60. The second largest cell of embryosac is

A) Egg cell B) Synergid C) Central cell D) Antipodal

Correct Answer: (A) Egg cell

Explanation: Smaller than central cell but larger than others.

61. The only dikaryotic cell of embryosac is

A) Synergid B) Egg cell C) Central cell D) Antipodal

Correct Answer: (C) Central cell

Explanation: Contains two polar nuclei before fertilization.

62. The diploid cell of embryosac is

A) Central cell B) Egg cell C) Synergid D) Antipodal

Correct Answer: (A) Central cell

Explanation: Contains two polar nuclei before fertilization (2n).

63. Karyogamy between genetically similar structures is seen in one of the following cells of embryosac.

A) Egg cell B) Synergid C) Central cell D) Antipodal

Correct Answer: (C) Central cell

Explanation: Fusion of two polar nuclei (homokaryogamy).

64. This cell of embryosac is not having its own wall.

A) Central cell B) Egg cell C) Synergid D) Antipodal

Correct Answer: (A) Central cell

Explanation: Large vacuolated cell with incomplete walls.

65. Direct pollination is seen in

A) Dicots B) Monocots C) Angiosperms D) Gymnosperms

Correct Answer: (D) Gymnosperms

Explanation: Pollen falls directly on ovule (no stigma).

66. Self pollinating flowers must be

A) Cleistogamous B) Chasmogamous C) Bisexual D) Xenogamous

Correct Answer: (C) Bisexual

Explanation: Requires both sexes in same flower (though not all bisexual flowers self-pollinate).

67 If the pollen grains of one flower of a plant fall on the stigma of another flower of the same plant it is described as

A) Xenogamy B) Geitonogamy C) Allogamy D) Autogamy

Correct Answer: (B) Geitonogamy

Explanation: Genetically self-pollination but technically cross-pollination.

68. Only Xenogamy takes place in

A) Acalypha B) Vallisnaria C) Hibiscus D) Ficus

Correct Answer: (B) Vallisnaria

Explanation: Dioecious plant (separate male/female plants).

69. Find the correct statement

A) All autogamous flowers are bisexual

B) All bisexual flowers are autogamous

C) All bisexual flowers are allogamous

D) All Allogamous flowers are bisexual

Correct Answer: (A) All autogamous flowers are bisexual

Explanation: Self-pollination requires both sexes in one flower.

70. The plants with both Cleistogamous and Chasmogamous flowers are

A) Viola,Oxalis,Commelina B) Ficus,Viola,Oxalis

C) Commelina,Carica,Cassia D) Viola,Vallisneria, Oxalis

Correct Answer: (A) Viola,Oxalis,Commelina

Explanation: Exhibit both closed (selfing) and open (outcrossing) flowers.

71. The plants which are mostly pollinated by water

A) Vallisneri,Borassus, Cocos B) Zostera, Hydrilla,Vallisnera

C) Hydrilla,Acalypha,Vallisneria D) Zostera,Nicotiana,Vallisneria

Correct Answer: (B) Zostera, Hydrilla,Vallisnera

Explanation: True hydrophiles (Zostera is marine).

72. The pollen tube enters into the embryosac by destroying

A) Egg cell B) Central cell C) Antipodal D) Synergid

Correct Answer: (D) Synergid

Explanation: One synergid degenerates to allow entry.

73. Pollen grains of angiosperms are released from the microsporangium at

A) 2-celled stage B) 1-celled stage C) 3-celled stage D) 4-celled stage

Correct Answer: (A) 2-celled stage

Explanation: Vegetative + generative cells (most angiosperms).

74. Strasburger discovered

A) Double fertiliszation B) Syngamy

C) Triple fusion D) Vegetative fertilization

Correct Answer: (D) Vegetative fertilization

Explanation:1884 discovery of sperm fusion with polar nuclei.

75. Nawaschin discovered

A) Syngamy in *Allium* B) Zygotic fertilization in *Fritillaria*

C) Triple fusion in *Lilium* D) Vegetative fertilization in *Polygonum*

Correct Answer: *(C) Triple fusion in Lilium*

Explanation: *1898 discovery of double fertilization.*

76. This is triploid.
    A) Zygote B) Secondary nuclus
    C) Primary endosperm nucleus D) Egg cell

Correct Answer: (C) Primary endosperm nucleus

Explanation: 2 polar nuclei (2n) + 1 sperm (n).

77. Presence of double fertilization is a feature of
    A) Gymnosperms B) Angiosperms C) Bryophytes D) All Phanerogams

Correct Answer: (B) Angiosperms

Explanation: Unique to flowering plants.

78. Ex-albuminous seeds are seen in
    A) *Ricinus* B) *Cocos* C) *Capsella* D) *Datura*

Correct Answer: *(C) Capsella*

Explanation: *No residual endosperm (e.g., peas, beans)*

79. The tissue that acts as nutritive tissue for the development of embryo is
    A) Nucellus B) Tapetum C) Endosperm D) Perisperm

Correct Answer:(C) Endosperm

Explanation: Primary nutritive source in most seeds.

80. Albuminous seeds are seen in
    A) *Cocos* B) *Ricinus* C) *Datura* D) All

Correct Answer: (D) All

Explanation: Cocos (coconut water), Ricinus (castor), Datura all retain endosperm.

81. In *Pyrus malus* the false fruit is developed from
    A) Thalamus B) Pedicel C) Peduncle D) Calyx

Correct Answer: (A) Thalamus

Explanation: Apple forms from floral receptacle (accessory fruit).

82. The succulent part in *Anacardium occidentalis* is
    A) Peduncle B) Pedicel C) Calyx D) Thalamus

Correct Answer:(A) Peduncle

Explanation: Cashew "apple" is swollen stalk.

83. Drupe is a
    A) Fleshy fruit B) Dry dehiscent fruit
    C) Dry indehiscent fruit D) Schizocarpic fruit

Correct Answer:(A) Fleshy fruit

Explanation: Stony endocarp (e.g., mango, peach).

84. The thalamus contributes in the formation fruits in
    A) Apple,Strawberry,Cashew nut B) Apple.Annona.Naravelia
    C) Strawberry.Solanum,Artocarpus D) Cashewnut,Artabotrys,Artocarpus

Correct Answer:(A) Apple,Strawberry,Cashew nut

Explanation: All are accessory fruits with thalamus tissue.

85. A plant with parthenocarpic fruit is
    A) Pyrus malus B) Anacardium occidentalis

C) Musa paradisiaca D) Annona squamosa

Correct Answer:(C) Musa paradisiaca

Explanation: Bananas develop without fertilization.

86. A plant where the seeds show around 10,000 years of dormancy

A) Lentinous edodes B) Lupinus arcticus

C) Lycopersicon esculentum D) Leucas aspera

Correct Answer:(B) Lupinus arcticus

Explanation: Arctic lupine seeds revived from Pleistocene age.

87. The process formation of seeds without fertilization is

A) Apospory B) Parthenocarpy C) Parthenogenesis D) Apomixis

Correct Answer: (D) Apomixis

Explanation: Asexual seed production (e.g., citrus, dandelions).

88. The protective structures present around the nucellus are called as

A) Strophiole B) Chalaza C) Funiculii D) Integuments

Correct Answer:(D) Integuments

Explanation: Develop into seed coats.

89. How do strawberries and spider plants reproduce?

a) Through leaf cuttings b) By forming tubers

c) Via stems called runners d) Through rhizomes

Correct Answer: (c) Via stems called runners

Explanation: Stolons (runners) produce new plantlets.

90. Which of the following plants can sprout new shoots and roots from underground stems?

a) Onions b) Ginger c) Potatoes d) Dahlias

Correct Answer: (b) Ginger

Explanation: Grows from rhizomes (also dahlias, but option d is plural).

91. What method do gardeners use to propagate African violets and succulents?

a) Root cuttings b) Stem cuttings c) Leaf cuttings d) Tubers

Correct Answer:(c) Leaf cuttings

Explanation: Both readily propagate from leaves.

92. Which animal reproduces through budding?

a) Starfish b) Hydra c) Planarians d) Worms

Correct Answer:(b) Hydra

Explanation: Forms buds that detach (also corals, yeasts).

93. What is the process called when animals regenerate lost body parts?

a) Budding b) Regeneration c) Fragmentation d) Parthenogenesis

Correct Answer:(b) Regeneration

Explanation: Seen in starfish, planarians, lizards.

94. Which of the following animals can reproduce through fragmentation?

a) Hydra b) Starfish c) Worms d) Planarians

Correct Answer: (d) Planarians

Explanation: Flatworms split and regenerate (also some annelids).