



## BIOLOGY

### BOOKS - S DINESH & CO BIOLOGY (HINGLISH)

#### REPRODUCTION IN ORGANISMS

Mcq

1. Apromixis is

- A. Development of plants in darkness
- B. Development of plants without fusion of gametes
- C. Inability to perceive stimulus for flowering

D. Effect of low temperature on plant growth.

**Answer: B**



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2. Amphimixis is development of an organism obtained through

- A. Apospory
- B. Apogamy
- C. Fusion of gametes
- D. Without fusion of gametes.

**Answer: C**



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3. Parthenogenesis is development of new individual from

- A. A single gamete without fertilization
- B. Fertilization of female gamete with female gamete
- C. Fertilization of male gamete with male gamete
- D. Vegetative structure.

**Answer: A**



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4. Reproduction which does not involve gametic union is

A. Paarasexual reproduction

B. Apomixis

C. Parthenogenesis

D. Agamospermy.

**Answer: B**



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5. Vegetative propagation through budding occurs in

A. Rose

B. Agave

C. Yeast

D. Ginger.

**Answer: C**



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**6. Binary fission is a regular mode of multiplication in**

A. Yeast

B. Bacteria

C. Marchantia

D. Mosses.

**Answer: B**



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7. A part of root of Dalbergia placed in the soil will

A. Sprout

B. Decay

C. Develop underground complex

D. Grow depending upon availability of food.

**Answer: A**



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8. Which root will form a new plant

A. Populus

B. Dahlia

C. Azadirachta

D. Both A and B.

**Answer: D**



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9. It is more economical to propagate Potato and Artichoke through

A. Pieces of tubers

B. Whole tubers

C. Seeds

D. Tissue culture.

**Answer: A**



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**10.** Onion is propagated through its

A. Tubers

B. Bulbs

C. Seeds

D. Rhizomes.



**Answer: B**



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**11. Bulbils are employed for multiplication of**

A. Bryophyllum

B. Crocus

C. Agave

D. Strawberry.

**Answer: C**



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12. Leaf tips help in vegetative propagation in

A. Begonia

B. Bryophyllum

C. Sensevieria

D. Adiantum caudatum.

**Answer: D**



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13. Bryophyllum diagremontianum is characterised by the formation of

A. Plantlets in leaf notches while attached to plant

- B. Plantlets from marginal notches when the leaf falls  
on the ground
- C. Buds in the marginal notches of leaves
- D. Plantlets on the leaves in the region of injury.

**Answer: A**



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**14.** Corm is used as a means of vegetative multiplication  
in

A. Ginger

B. Gladiolus

C. Banana

D. Pineapple.

**Answer: B**



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**15. Banana is multiplied by means of**

A. Seeds

B. Leaf cuttings

C. Rhizome

D. Offsets.

**Answer: C**



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**16.** Leaf cuttings are used for quick vegetative propagation of

A. Sansevieria

B. Jasminum

C. Tea

D. Blackberry.

**Answer: A**



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17. Blackberry is multiplied through

A. Stem cuttings

B. Bulbils

C. Leaf cuttings

D. Root cuttings.

**Answer: D**



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18. Stem cuttings are often treated with NAA before sowing in order to promote

A. Sprouting of buds

B. Rooting

C. Layering

D. Development of adventitious buds.

**Answer: B**



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**19.** Leaf and stem cuttings are sown

A. Vertically with morphological apical end upwards

B. Vertically with morphological basal end upwards

C. Laterally with morphological upper side upwards

D. Laterally with morphological lower side upwards

**Answer: A**



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20. Air layering is performed in case of

A. Jasmine

B. Grape Vine

C. Gooseberry

D. Litchi.

**Answer: D**



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21. Many new plants are obtained through

- A. Air layering
- B. Mound layering
- C. Serpentine layering
- D. Both B and C.

**Answer: D**



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22. The stem branch used in layering is

- A. Upper branch
- B. Young branch
- C. Soft basal branch
- D. Hard basal branch.

**Answer: C**



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**23. IN grafting, scion forms**

- A. Shoot system
- B. Root system
- C. New plant

D. Hybrid plant.

**Answer: A**



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24. The technique of pegging a branch in soil is called

A. Grafting

B. Layering

C. Cutting

D. Vegetative propagation.

**Answer: B**



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25. Bud grafting is commonly used in

A. Litchi

B. Pomegranate

C. Rose

D. Jasmine.

**Answer: C**



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26. Vegetatively propagated plants

- A. Show adaptive variations
- B. Better fitted in the struggle for existence
- C. Stouter than parents
- D. Clone of their parent.

**Answer: D**



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**27. Clone is**

- A. Descendants of a single parent
- B. Vegetatively produced descendants of a single parent

C. Sexually produced descendants of a single couple

D. All the above

**Answer: B**



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**28.** Which one is propagated by cuttings

A. Bougainvillea

B. Tea

C. Sansevieria

D. All the above

**Answer: D**



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**29.** Grafting is employed for better and quicker yield of good varieties of

A. Apple

B. Citrus

C. Mango

D. All the above

**Answer: D**



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30. Parthenogenesis is formation of

- A. Embryo without fertilization
- B. Embryo from pollen sac
- C. Sporophytic plantlet from gametophyte
- D. Fruit without fertilization.

**Answer: A**



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31. The smallest viable unit which can grow, multiply and form a plant in tissue culture is



A. Chromosome

B. Nucleus

C. Cell

D. Tissue

**Answer: C**



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**32. Micropropagation is**

A. Raising of plants from a small tissue in culture

B. Multiplication of small plants

C. Propagation of small parts of organisms

D. Indefinite maintenance of an organ or tissue

**Answer: A**



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**33. Tissue culture is**

A. Growth of specific plant structures on artificial medium

B. Growth and multiplication of cells on artificial medium

C. Cryogenic maintenance of tissues

D. Maintenance, growth and differentiation of cells, tissues and organs on artificial medium.

**Answer: D**



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**34.** Part of plant used for culturing is called

- A. Scion
- B. Explant
- C. Stock
- D. Callus.

**Answer: B**



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**35.** Tissue culture technique was first attempted by

A. Haberlandt

B. Hanning

C. Nobecourt

D. Gautheret.

**Answer: A**



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36. Tissue culture technique was first performed successfully by

A. Haberlandt

B. Nobecourt

C. White

D. Gautheret.

**Answer: C**



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37. The structure employed by White for first successful tissue culture was

- A. Root of Carrot
- B. Root of Tomato
- C. Leaf cells
- D. Apical meristem.

**Answer: B**



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**38. Callus is**

- A. Tissue that forms embryo
- B. An insoluble carbohydrate
- C. Tissue that grows to form embryoid

D. Unorganised actively dividing mass of cells maintained in culture.

**Answer: D**



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**39.** Callus formation is promoted by

A. Proper light and subculuring

B. Darkness and subculturing

C. Excess of NAA

D. Absence of salts.

**Answer: B**



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**40.** Differentiation of callus into plant parts is

- A. Embryogenesis
- B. Embryoid formation
- C. Morphogenesis
- D. Totipotency.

**Answer: C**



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41. Who discovered that morphogenesis in culture medium is controlled by hormones

- A. Muir et al
- B. Vasil and Hilderbrandt
- C. Skoog and Miler
- D. Helperin and Wetherell.

**Answer: C**



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42. Embryoid culture technique was discovered by

- A. Guha and Maheshwari

B. Skoog and Miler

C. Muir et al

D. Steward.

**Answer: D**



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**43. Embryoid is**

A. A miniature embryo

B. Non-zygotic embryo formed in vitro culture

C. Embryo raised in culture medium

D. Cellular aggregate similar to embryo in appearance.

**Answer: B**



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**44.** The concept of cellular totipotency was given by

A. Steward

B. Vasil and Hilderbrandt

C. Carlson et al

D. Barski et al.

**Answer: A**



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**45. Ramet is**

A. Clone

B. Individual of clone

C. Cell aggregate

D. Callus.

**Answer: B**



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46. Guha and Maheshwaris are famous for

- A. Shoot tip culture
- B. Protoplast fusion
- C. Embryoid culture
- D. Pollen culture.

**Answer: D**



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47. The technique of protoplast fusion was developed by

- A. Helperin and Wetherell

B. Carlson at al

C. White

D. Steward.

**Answer: B**



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**48.** Explant is required to be disinfected before placing in culture. This is done by

A. Autoclaving

B. Ultra-violet rays

C. Clorax or hypochlorite

D. X-rays.

**Answer: C**



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**49.** Aseptic culture means

A. Absence of life

B. Presence of bacteria

C. Absence of other organisms like microbes

D. Parthenogenetic development.

**Answer: C**



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50. Variations appearing suddenly in cultures are

- A. Somatic variations
- B. Somaclonal variations
- C. Mutations
- D. Aberrations.

**Answer: B**



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51. Virus-free plants can be obtained by:



A. Shoot tip culture

B. Haploid culture

C. Protoplast fusion

D. Embryo culture

**Answer: A**



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**52.** What additional treatment is required for protoplasts fusion in plants

A. Polyethylene glycol and sodium nitrate

B. Coconut milk and glycine

C. Cellulase and pectinase

D. All the above

**Answer: C**



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**53.** Protoplast fusion results in

A. Parasexual/somatic hybridisation

B. Genetic hybridisation

C. Male sterility

D. Rapid growth and acclimitisation.

**Answer: A**



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**54.** Pollen culture produces

- A. Haploid plants where every gene can express its effect
- B. Homozygous diploid plants
- C. Abundant seeds of rare plants
- D. Abundant pollen in male sterile plants.

**Answer: A**



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55. An androgenic plant can be converted into homozygous diploid plant through the application of

A. Nitrogen mustard

B. Nitrous acid

C. Colchicine

D. Acridine orange.

**Answer: C**



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56. The enzymes required to obtain wall-free/naked protoplasts are

- A. Cellulase and proteinase
- B. Cellulase and pectinase
- C. Cellulase and pectinase
- D. Cellulase and amylase

**Answer: B**



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57. Which technique can be helpful in over-coming hybridisation barrier

A. Shoot tip culture

B. Embryo rescue

C. Protoplast fusion

D. Both B and C.

**Answer: D**



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**58.** Two protoplasts can be made to fuse through the application of

A. Electrofusion

B. Polyethylene glycol

C. Sodium nitrate

D. All the above

**Answer: D**



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**59.** Who developed the technique of nurse tissue to show cellular totipotency

A. Hilderbrandt

B. Steward

C. Muir

D. Konar.

**Answer: C**



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**60.** Pollen embryoids were discovered by

- A. Konar and Nataraja
- B. Guha and Maheshwari
- C. Skoog and Miler
- D. Helperin and Wetherell.

**Answer: B**



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61. The term parthenogenesis was introduced by

- A. Charles Bonnet
- B. Karl von Baer
- C. Spallanzani
- D. None of the above.

**Answer: A**



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62. Endogenous budding occurs in \_\_\_\_\_

- A. Hydra

B. Marine sponge

C. Fresh water sponge

D. Obelia.

**Answer: C**



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**63.** Pseudopodiospores are formed in \_\_\_\_\_

A. Amoeba

B. Plasmodium

C. Planaria

D. Euglena

**Answer: A**



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**64.** Crocodile lives for about \_\_\_\_\_

A. 10 years

B. 20 years

C. 40 years

D. 60 years.

**Answer: D**



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65. Binary fission is longitudinal in

A. Paramecium

B. Vorticella

C. Amoeba

D. Plasmodium.

**Answer: B**



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66. Penicillium produces

A. Zoospores

B. Mitospores

C. Meisopores

D. Both B and C.

**Answer: D**



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**67.** Tapeworm shows

A. Strobilation

B. Plasmotomy

C. Multiple fission

D. Binary fission.

**Answer: A**



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**68.** A dioecious plant is

A. Pinus

B. Maize

C. Cycas

D. Chara.

**Answer: C**



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69. The dioecious plant *Marchantia* develops sex organs on

- A. Antheridiophore
- B. Archegoniophore
- C. Both A and B
- D. Tassel.

**Answer: C**



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70. Dog is a

- A. Continuous breeder

B. Seasonal breeder

C. Monoestrus

D. Polyoestrus.

**Answer: B**



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**71.** Fertilization is internal in \_\_\_\_\_

A. Amphibians

B. Star Fishes

C. Bony Fishes

D. Sharks.



**Answer: D**



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**72. Whiptail lizards show**

- A. Periodic parthenogenesis
- B. Paedogenic parthenogenesis
- C. Obligatory parthenogenesis
- D. Incomplete parthenogenesis.

**Answer: C**



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73. Thelytoky occurs in

- A. Aphids
- B. Typhlina
- C. Honey Bee
- D. Wasp.

**Answer: B**



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74. Endogamy is reported in

- A. Fasciola

B. Earthworm

C. Marchantia

D. Rabbit.

**Answer: A**



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**75.** Apomixis is development of new plant

A. Without fusion of gametes

B. From fusion products of gametes

C. From stem cuttings

D. From root cuttings.

**Answer: A**



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76. Development of an organism from female gamete/egg without involving fertilization is

- A. Aeventitive embryony
- B. Polyembryony
- C. Parthenocarpy
- D. Parthenogenesis

**Answer: D**



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77. An example of parthenogenesis in the development of fruit is the one \_\_\_\_\_

- A. With viable seeds after fertilization
- B. With viable seeds after pollination
- C. With viable seeds without fertilisation
- D. Without seeds after pollination.

**Answer: C**



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78. Scion is the term used in relation to

A. Embryology

B. Grafting

C. Agamospermy

D. Emasculation.

**Answer: B**



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**79.** Clone is a group of individuals got through \_\_\_\_\_

A. Self pollination

B. Cross pollination

C. Vegetative propagation

D. Hybridisation.

**Answer: C**



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**80.** Which is not a method of vegetative propagation

A. Micropropagation

B. Budding

C. Sowing

D. Layering

**Answer: C**



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**81.** A population of genetically identical individuals, obtained from asexual reproduction is

- A. Callus
- B. Clone
- C. Deme
- D. Aggregate.

**Answer: B**



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**82.** Parthenogenesis is



- A. Development of embryo without fertilization
- B. Development of fruit without fertilization
- C. Development of fruit without hormones
- D. Development of embryo from egg without fertilization

**Answer: D**

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**83.** Cellular totipotency was demonstrated by

- A. Theodore Schwann
- B. A.V. Leeuwenhoek

C. F.C. Steward

D. Robert Hooke.

**Answer: C**



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**84.** Totipotent cell refers to

A. An undifferentiated cell capable of developing into a system or entire plant

B. An undifferentiated cell capable of developing into an organ

C. An undifferentiated cell capable of developing into complete embryo

D. Cell which lacks the capability to differentiate into an organ or system.

**Answer: A**



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**85.** A major use of embryo culture is in

A. Induction of somaclonal variations

B. Overcoming hybridisation barriers

C. Production of alkaloids

## D. Clonal propagation

**Answer: B**



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**86.** After culturing the anther of a plants few diploid plant were got along with haploid plant . Which of the following part might have given rise to diploid plant

- A. Exine of pollen gram
- B. Vegetative cell of pollen
- C. Cells of anther wall
- D. Generative cell of pollen.

**Answer: C**



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**87.** Which ones produce androgenic haploids in anther cultures

- A. Anther wall
- B. Tapetal layer of anther wall
- C. Connective tissue
- D. Young pollen grains.

**Answer: D**



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**88.** In Tobacco callus, which one shall induce shoot differentiation in combination of auxin and cytokinin

A. Higher concentration of cytokinin and lower concentration of auxin

B. Lower concentration of cytokinin and higher concentration of auxin

C. Only cytokinin and no auxin

D. Only auxin and no cytokinin

**Answer: A**



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89. Who could grow tomato roots successfully and develop the technique of tissue culture of rthe first time ?

A. Hilderbrandt

B. P.R. White

C. W.H. Muir

D. F.C. Steward.

**Answer: B**



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90. Which of the following plants cells with show totipotency ?

A. Sieve tubes

B. Xylem vessels

C. Meristem

D. Cork cells.

**Answer: C**



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91. Variation observed during tissue culture of some plants are known as



- A. Clonal variations
- B. Somaclonal variations
- C. Somatic variations
- D. Tissue culture variations.

**Answer: B**



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**92. Virus free plants can be obtained by**

- A. Antibiotic treatment
- B. Bordeaux mixture
- C. Root tip culture

D. Shoot tip culture.

**Answer: D**



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**93.** Tissue culture technique can produce infinite number of new plants from a small parental tissue. The economic importance of the technique is in raising

- A. Variants through picking up somaclonal variations
- B. Genetically uniform population of an elite species
- C. Homozygous diploid plants
- D. Development of new species.

**Answer: B**



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**94.** External water is not required for fertilization of

- A. Pteridophytes
- B. Bryophytes
- C. Thallophytes
- D. Spermatophytes.

**Answer: D**



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95. Syngamy is

- A. Fusion of gametes
- B. Fusion of cytoplasms
- C. Fusion of two similar spores
- D. Fusion of two dissimilar spores

**Answer: A**



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96. Estrous cycle is indication of

- A. Breeding period

B. Estrogen secretion

C. Pregnancy

D. Menopause

**Answer: A**



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**97.** A quicker regeneration of grass leaves shall occur by

A. Cutting

B. Grazing

C. Irrigation

D. Clipping.

**Answer: D**



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**98. Monoestrous animals have**

- A. One ovulation each month
- B. One egg
- C. One breeding season in a year
- D. One menses each month.

**Answer: C**



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99. For ovulation in reflex ovulators

- A. Coitus is necessary
- B. Coitus is not necessary
- C. Plenty of food is not necessary
- D. Plenty of food is necessary

**Answer: A**



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100. Estrous cycle is a characteristic of \_\_\_\_\_

- A. Human females

B. Mammalian females

C. Mammalian females other than primates

D. Mammals.

**Answer: C**



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**101.** Grafting is not possible in monocots because they

A. Lack cambium

B. Are herbaceous

C. Have scattered vascular bundles

D. Have parallel venation



**Answer: A**



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**102.** A piece of potato tuber will form a new plant if it has

- A. Branches
- B. Stored food
- C. Roots
- D. Scales/eyes.

**Answer: D**



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103. Layering is used for vegetative propagation of

A. Rose

B. Jasmine

C. Mango

D. All the above

**Answer: B**



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104. Roots are used in vegetative propagation of

A. Ginger

B. Chrysanthemum

C. Sweet Potato

D. Potato.

**Answer: C**



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**105.** Individuals of a clone have.

A. Same age

B. Same height

C. Same genome

D. Same number of leaves.

**Answer: C**



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**106.** Asexually produced organism inheriting all the characters of the parent is:

A. Offspring

B. Clone

C. Variety

D. Hybrid

**Answer: B**



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107. Stem cuttings are commonly used for the propagation of

A. Mango

B. Cotton

C. Rose

D. Banana.

**Answer: C**



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108. Haploid plant cultures are got from

A. Leaves

B. Root tip

C. Pollen grain

D. Buds

**Answer: C**



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**109.** Somaclonal variations are the ones.

A. Caused by mutagens

B. Produced during tissue culture

C. Induced during sexual embryogeny

D. Caused by gamma rays.

**Answer: B**



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**110.** Parasexual hybridisation means fusion of

A. Male gamete with female gamete

B. Male gamete with synergid

C. Somatic protoplasts

D. Male gamete with somatic cell

**Answer: C**



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111. Application of embryo culture is in

- A. Clonal propagation
- B. Overcoming hybridisation barrier
- C. Production of alkaloids
- D. Formation of somaclonal variations.

**Answer: B**



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112. Plants developed in vitro culture from pollen grains are



A. Androgenic haploids

B. Pollen plants

C. Male plants

D. Sterile plants.

**Answer: A**



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**113.** In bacterial/tissue culture, glassware and nutrients are streilised through

A. Water bath at  $200^{\circ} C$

B. Dry air oven at  $200^{\circ} C$

C. Dehumidifier

D. Autoclave.

**Answer: D**



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**114.** Development of shoot and root is determined by

A. Cytokinin and auxin ratio

B. Enzymes

C. Temperature

D. Plant nutrients.

**Answer: A**



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**115.** Plant medium used widely in preparation of culture medium is got from

- A. *Cycas revoluta*
- B. *Cocos nucifera*
- C. *Pinus roxburghii*
- D. *Borassus flabellifera*.

**Answer: C**



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**116.** Mango and Guava are propagated through

- A. Tissue culture
- B. Grafting
- C. Stem cuttings
- D. Layering.

**Answer: B**



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**117.** Chrysanthemum multiplies vegetatively by

- A. Suckers

B. Runners

C. Stolons

D. Rhizomes.

**Answer: A**



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**118.** In vegetative propagation by tubers, which of following remains constant through generations?

A. Morphology

B. Vigour only

C. Vigour and morphology only

D. Morphology, vigour and disease resistance.

**Answer: D**



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**119.** Induction of rooting on stems before separating them from parent plant is

A. Grafting

B. Layering

C. Cutting

D. Root-stem joint

**Answer: B**



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**120.** Clonal cell lines can be obtained by :

- A. Tissue culture
- B. Tissue fractionation
- C. Tissue homogenisation
- D. Tissue system

**Answer: A**



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**121.** Axenic culture is

A. Culture of tissue

B. Culture of genes

C. Pure culture without contamination

D. Pure culture of microbe without any external nutrient.

**Answer: C**



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**122.** A cell from leaf is made to grow into complete plant under culture conditions. It shows cellular

A. Cloning



B. Totipotency

C. Hybridisation

D. All the above

**Answer: B**



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**123.** Out of the following which two methods yield genetically similar plants:

(i) Stem cuttings (ii) Seed production (iii) Mutation (iv)

Tissue culture

A. (i) and (ii)

B. (ii) and (iii)

C. (i) and (iv)

D. (ii) and (iv)

**Answer: C**



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**124.** In tissue culture, callus can be induced to form shoot or root by altering the ratio of

A. Auxin to cytokinin

B. Cytokinin to ethylene

C. Auxin to gibberellin

D. Gibberellin to cytokinin.

**Answer: A**



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**125.** Method of raising new plants in large number from a small plant tissue over a culture medium is

- A. Callus formation
- B. Micropropagation/tissue culture
- C. Micrografting
- D. Juvenility

**Answer: B**



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126. First succesful animal clone was

- A. Dooly goat
- B. Dolly sheep
- C. Molly goat
- D. Molly sheep

**Answer: B**



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127. Hormone used in tissue culture for better growth is

A. Gibberellin

B. Auxin

C. Cytokinin

D. Both B and C.

**Answer: D**



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**128.** First step in protoplasm fusion is

A. Collection of somatic cell

B. Selection and isolation of somatic cells

C. Isolation of protoplasts

D. Hybridisation.

**Answer: B**



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**129.** Potatoes are cultivated by

A. Seeds

B. Foliar buds

C. Buds on tubers

D. Cuttings of roots.

**Answer: C**



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130. Ginger multiplies vegetatively by

- A. Rhizome
- B. Tuber
- C. Stem
- D. Bud.

**Answer: A**



**Watch Video Solution**

131. Bryophyllum is multiplied vegetatively by

A. Roots

B. Leaves

C. Stem branch

D. Rhizome

**Answer: B**



**Watch Video Solution**

**132.** Development of haploid plants from pollen is

A. Parthenocarpy

B. Emasculation

C. Androgenesis



D. Somatic hybridisation

**Answer: C**



**Watch Video Solution**

**133.** Plant piece used in tissue culture is called

A. Inoculant

B. Somaclone

C. Clone

D. Explant .

**Answer: D**



**Watch Video Solution**

**134.** In tissue culture medium, the embryoids formed from pollen grains is due to

- A. Test tube culture
- B. Cellular totipotency
- C. Organogenesis
- D. Double fertilisation.

**Answer: B**



**Watch Video Solution**

**135.** F.C. Steward is associated with

A. Molecular biology

B. Genetics

C. Tissue culture

D. Immunology.

**Answer: C**



**Watch Video Solution**

**136.** Explant is

A. A small part of plant for tissue culture

B. Exploited part of plant

C. Harvested plant

D. Uprouted part for transplantation.

**Answer: A**



**Watch Video Solution**

**137.** Callus is

- A. Material that heals injury in phloem
- B. Undifferentiated mass of cells
- C. Tissue developed in the region of wound
- D. All the above

**Answer: D**



**Watch Video Solution**

**138.** Plant propagated by leaves is

A. Kalanchoe

B. Agave

C. Potato

D. Gladiolus.

**Answer: A**



**Watch Video Solution**

**139.** Binary fission is a form of :

A. Vegetation propagation

B. Asexual reproduction

C. Sexual reproduction

D. Nuclear fragmentation.

**Answer: B**



**Watch Video Solution**

**140.** In oogamy, fertilization involves \_\_\_\_\_

A. A small non-motile female gamete and large motile male gamete

B. A large non-motile female gamete and a small motile male gamete

C.

D. A large motile female gamete and a small non-motile male gamete.

**Answer: B**



**Watch Video Solution**

**141.** Maximum life span of a dog is

A. 5

B. 10

C. 15

D. 20

**Answer: D**



**Watch Video Solution**

**142.** Menstrual cycle occurs in

A. Female primates

B. Human females

C. Mammalian females

D. Rabbit.



**Answer: A**



**Watch Video Solution**

**143.** Parthenogenesis is a type of :

- A. Sexual reproduction
- B. Asexual reproduction
- C. Regeneration
- D. Budding

**Answer: B**



**Watch Video Solution**

144. In which one pair both the plants can be vegetatively propagated by leaf segments ?

- A. Agave and Kalanchoe
- B. Bryophyllum and Kalanchoe
- C. Asparagus and Bryophyllum
- D. Chrysanthemum and Agave.

**Answer: B**



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145. Artificial vegetative reproduction through cutting of roots is carried out in

A. Lemon and Rose

B. Rose and Hibiscus

C. Tamarind and Chrysanthemum

D. Lemon and Tamarind

**Answer: D**



**Watch Video Solution**

**146.** Seedless fruits in Banana are produced through

A. Asexual reproduction

B. Parthenogenesis

C. Triploid

D. Cross pollination.

**Answer: B**



**Watch Video Solution**

**147.** The internal buds of fresh water sponges are otherwise called

A. Choanocyte

B. Gemmule

C. Osculum

D. Blastula

**Answer: B**



[Watch Video Solution](#)

**148.** Which of the following groups of plants are propagated through underground root

- A. Bryophyllum and kalanchoe
- B. Ginger, potato, onion and zamikand
- C. Pistia, chrysanthemum and pineapple
- D. Sweet potato, asparagus, tapioca and dahlia

**Answer: D**



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**149.** Grafting is successful in dicots but not in monocots because the dicots have-

- A. Vascular bundles arranged in a ring
- B. Cambium for secondary growth
- C. Vessels with elements arranged end to end
- D. Cork cambium.

**Answer: B**



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**150.** A scion is grafted to a stock. The quality of fruits produced will be determined by the genotype of -

A. Scion

B. Stock

C. Both A and B

D. None of the above.

**Answer: A**



**Watch Video Solution**

**151.** Through which technique more female plants can be produced in Papaya

A. Genetic engineering

B. Polyploid breeding

C. Spraying ethephon

D. Tissue culture.

**Answer: D**



**Watch Video Solution**

**152. Hermaphrodite animal is**

A. Spider

B. Honey Bee

C. Ascaris

D. Leech.



**Answer: D**



**Watch Video Solution**

**153.** Greek word "sexus" means \_\_\_\_\_

A. Disjunction

B. Disintegration

C. Union

D. Both A and B.

**Answer: C**



**Watch Video Solution**

**154.** During favourable condition the encysted amoeba divides by multiple fission and produces pseudopodiospores. This phenomenon is known as

- A. Budding
- B. Sporulation
- C. Fragmentation
- D. Regeneration.

**Answer: B**



**Watch Video Solution**

**155.** Transverse binary fission occurs in

A. Euglena

B. Amoeba

C. Hydra

D. Paramecium.

**Answer: D**



**Watch Video Solution**

**156.** Plants with poor root system are propagated through

A. Layering

B. Leaf cuttings

C. Stem cuttings

D. Grafting.

**Answer: D**



**Watch Video Solution**

**157.** Type of asexual reproduction found in Hydra is

A. Gemmule formation

B. Sporulation

C. Binary fission

D. Budding

**Answer: D**



**Watch Video Solution**

**158.** Isogamy is found in

A. Hydra

B. Monocystis

C. Plasmodium

D. Planaria

**Answer: B**



**Watch Video Solution**

**159.** Vegetative propagation in Mint occurs by

A. Sucker

B. Runner

C. Offset

D. Rhizome.

**Answer: A**



**Watch Video Solution**

**160.** Identify the correct statement

- A. Because of marked climatic variations, plants growing near the sea shore do not produce annular rings
- B. The age of the plant can be determined by its height
- C. Grafting is difficult in monocot plants as they have scattered vascular bundles
- D. Healing of damaged tissue is because of activity of sclerenchyma cells.

**Answer: C**



**Watch Video Solution**

**161.** Hydra reproduces by budding. This is an example of

- A. Asexual reproduction
- B. Sexual reproduction
- C. Regeneration
- D. Parthenocarpy

**Answer: A**



**Watch Video Solution**

**162.** In grafting, stock is

- A. Stem of desired variety



B. Bud of disired variety

C. Part of rooted plant

D. Part to be grafted.

**Answer: C**



**Watch Video Solution**

**163.** The term 'parthenogenesis' was coined by :

A. Grobben

B. Balfour

C. Boveri

D. siebold

**Answer: D**



**Watch Video Solution**

**164.** Micropropagation is a technique for production of

- A. True to type plants
- B. Haploid plants
- C. Somatic hybrids
- D. Somaclonal plants

**Answer: A**



**Watch Video Solution**

**165.** Find out wrongly match pair

A. Tuber-Potato

B. Leaf bunds- Banana

C. Offsets - Water Hyacinth

D. Rhizome- Ginger

**Answer: B**



**Watch Video Solution**

**166.** Which is not an example of vegetative propagule in angiosperms

A. Zoospores of Chlamydomonas

B. Eyes of Potato

C. Rhizome of Ginger

D. Bulbil of Agave.

**Answer: A**



**Watch Video Solution**

**167.** Vegetative propagation in Pistia/Water Hyacinth occurs by

A. Sucker

B. Runner

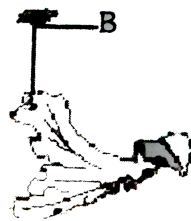
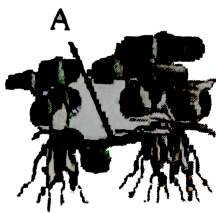
C. Offset

D. Stolon.

Answer: C

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168. Examine the figure (A-D) given below and select the right option out of a-d in which all the four structures A, B, C, and D are identified correctly



A. *a* Rhizome *b* Sprangiophore *c* Polar cell *d* Globule

B.

*a* Runner *b* Archegoniophore *c* Synergid *d* Antheridium

C.

*a* Offset *b* Anthridiophore *c* Antipodals *d* Oogonium

*a* Sucker *b* Seta *c* Megaspore mother cell *d* Gemma cup

**Answer: C**



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**169.** In which of the following asexual reproduction, a maternal cell produces innumerable unicellular

uninucleate offspring

- A. Sporulation
- B. Fragmentation
- C. Pathenogenesis
- D. Multiple fission

**Answer: D**



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**170.** Vegetative propagation by leaves is found in

- A. Albizzia lebbek
- B. Dalbergia sisso

C. Bryophyllum diagremontianum

D. Murraya sp.

**Answer: C**



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**171.** The mode of asexual reproduction in Euglena is

A. Transverse binary fission

B. Irregular binary fission

C. Multiple fission

D. Longitudinal binary fission



**Answer: D**



**Watch Video Solution**

**172.** Natural parthenogenesis occurs in

A. *Drosophila*

B. Housefly

C. Honey Bee

D. All the above

**Answer: C**



**Watch Video Solution**

**173.** Petiole is used in multiplication of

A. Bignonia

B. Saintpaulia

C. Sansevieria

D. Peperomia.

**Answer: D**



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174. Match the columns and select the correct options

I		II	
a	Gemmule	p	Agave
b	Leaf buds	q	<i>Penicillium</i>
c	Bulbil	r	Water Hyacinth
d	Offset	s	Sponges
e	Conidia	t	<i>Bryophyllum</i>

- (A) a-s, b-t, c-p, d-r, e-q  
(B) a-s, b-r, c-q, d-p, e-t  
(C) a-r, b-t, c-s, d-q, e-p  
(D) a-s, b-p, c-t, d-r, e-q  
(E) a-r, b-t, c-s, d-p, e-q.

A. a-s,b-t,c-p,d-r,e-q

B. a-s,b-r,c-d-p,e-t

C. a-r,b-t,c-s,d-q,e-p

D. a-s,b-t,c-s,d-p,e-q

Answer: A



175. What is common between vegetative reproduction and Apomixis

- A. Both applicable to dicots
- B. Both bypass flowering phase
- C. Both occur around the year
- D. Both produce progeny identical to parent.

**Answer: D**



176. Which is wrongly matched

- A. Agave-bulbils
- B. Penicillium-conidia
- C. Water Hyacinth -runner
- D. Bryophyllum-leaf buds.

**Answer: C**



**Watch Video Solution**

177. Fusion of dissimilar gametes is

- A. Allogamy

B. Dichogamy

C. Autogamy

D. Fertilization

**Answer: D**



**Watch Video Solution**

**178.** Animals which possess cleidoic eggs exhibit

A. External fertilization and internal development

B. Internal fertilization and internal development

C. Internal fertilization and external development

D. External fertilization and external development

**Answer: C**



**Watch Video Solution**

**179.** A clone is

- A. A group of genetically similar organisms produced as a result of asexual reproduction.
- B. A group of genetically similar organisms produced through sexual reproduction.
- C. A group of genetically dissimilar organisms produced as a result of asexual reproduction.

D. A group of genetically dissimilar organisms produced as a result of sexual reproduction.

**Answer: A**



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**180.** In sexual reproduction of algae fusion between one large, non-motile (static) female gamete and a smaller motile male gamete is termed as

A. Isogamous

B. Anisogamous

C. Oogamous



D. None of these

**Answer: C**



**Watch Video Solution**

**181.** Regarding fertilization which among the following statements is incorrect

A. It restores diploid condition in the zygote

B. It activates egg both physiologically and metabolically

C. Paternal and maternal sets contribute to the diploid number without causing any variation.

D. It determines the sex of the offspring.

**Answer: C**



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**182.** Which among the following statements is correct to indicate the difference between sperm and egg

- A. Cytoplasm in sperm is more abundant than in egg
- B. Accessory membranes are absent in sperm but present in egg
- C. Nucleus is clear in sperm and very compact in egg

D. Mitochondria forms a sheath in egg and diffused in sperm.

**Answer: B**



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**183.** Bacteria, fungi and lower plants survive during adverse conditions by

- A. Suspended growth
- B. Migration
- C. Diapause
- D. Formation of thick-walled spores.

**Answer: D**



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**184.** Which one is common to multicellular fungi, filamentous algae and protonema of mosses

- A. Diplontic life cycle
- B. Members of kingdom plantae
- C. Multiplication by fragmentation
- D. Mode of nutrition.

**Answer: C**



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**185.** Which is connected to asexual reproduction

A. Gemmules

B. Gametes

C. Gonads

D. Genitalia

**Answer: A**



**Watch Video Solution**

**186.** Consider the following statement with respect to reproduction in the lower living organisms

- A. Organisms like yeast and Planaria reproduce asexually by means of budding
- B. True regeneration is observed in Hydra
- C. The protonema of mosses multiply by fragmentation
- D. In the unicellular organisms like bacteria algae and Amoeba, reproduction is synonymous with growth i.e increase in number of cells of the above statements

A. a and b correct

B. b and c correct

C. a and d correct

D. c and d correct

**Answer: D**



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**187.** Find out correct order of vegetative propagules of plants like potato, ginger Agave, Bryophyllum and water hyacinth.

- A. Offset, bulbil, leaf bud, rhizome and eyes
- B. Leaf bud, bulbil, offset, rhizome and eyes
- C. Eyes, rhizome, bulbil, leaf bud and offset
- D. Rhizome, bulbil, leaf bud, eyes and offset

**Answer: C**



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**188.** Why is asexual reproduction sometimes disadvantageous

- A. It allows sedentary animals to produce offspring without mates
- B. It allows animals to produce many offspring quickly
- C. It saves times and energy of gamete formation
- D. It produces genetically uniform population.

**Answer: D**



**Watch Video Solution**

**189.** Which one represents male gamete



A. Antipodals

B. Synergids

C. Endosperm

D. Pollen grain.

**Answer: D**



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**190.** Monoecious plant of Chara shows occurrence of

A. Upper oogonium and lower antheridium on the same plant

B. Antheridiophore and archegoniophore on the same plant

C. Stamen and carpel on the same plant

D. Upper antheridium and lower oogonium on the same plant.

**Answer: A**



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**191.** Meiosis occurs in

A. Megaspore

B. Meiocyte

C. Conidia

D. Gemmule.

**Answer: B**



**Watch Video Solution**

**192.** Product of sexual reproduction generally generates

A. Large biomass

B. Longer viability of seeds

C. Prolonged dormancy

D. New genetic combinations leading to variations.

**Answer: D**



**Watch Video Solution**

**193.** Megaspores are produced from megaspore mother cells after

- A. Formation of thick walls
- B. Differentiation
- C. Meiotic division
- D. Mitotic division.

**Answer: C**



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194. Syngamy can occur outside the body of organisms in

A. Algae

B. Ferns

C. Fungi

D. Mosses.

**Answer: A**



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195. Human gametes differ from all other body cells in being

A. Haploid

B. Diploid

C. Motile

D. Without cell wall.

**Answer: A**



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**196.** Assertion a. Gametes are formed independently either from diploid or haploid parents. Gametes are always haploid

Reason r. In diploid parents, gametes are formed

through mitosis and meiosis while in haploid parents it occurs through meiosis.

A. a is wrong and r is correct

B. a is correct and r is wrong

C. Both a and r are correct but r is not correct

explanation of a

D. a and r both are correct and r is correct

explanation of a

**Answer: B**



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**197.** In which set of organisms does external fertilization occur

- A. Echinodermata and mosses
- B. Hemichordata and ferns
- C. Amphibians and algae
- D. Reptiles and gymnosperms.

**Answer: C**



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**198.** Match the following and choose the correct combination



<i>Name</i>	<i>Chromosome Number in Meocyte (2n)</i>
(a) Housefly	(1) 20
(b) Fruitfly	(2) 34
(c) Apple	(3) 8
(d) Maize	(4) 12

A. a-1, b-2, c-3, d-4

B. a-2, b-3, c-4, d-1

C. a-3, b-4, c-2, d-1

D. a-4, b-3, c-2, d-1

**Answer: D**



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**199.** Process of sexual reproduction which involves meiosis and syngamy is

- A. Apomixis
- B. Amphimixis
- C. Agamospermy
- D. Diplospory.

**Answer: B**



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**200.** A polyoestrus animal is

A. Man

B. Cat

C. Rabbit

D. Horse.

**Answer: C**



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**201.** Adventitious buds at the leaf notches help to propagate the plant

A. Potato

B. Agave

C. Bryophyllum

D. Cactus

**Answer: C**



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**202.** Gametogenesis refers to the process of

A. Fusion of two gametes

B. Fusion of two gametangia

C. Formation of two types of gametes

D. Formation of male gametes only.

**Answer: C**



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**203.** Chromosome number of apple meiocytes is

A. 12

B. 34

C. 46

D. 78

**Answer: B**



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**204.** Zygote is formed by the process of

- A. Isogamy
- B. Anisogamy
- C. Oogamy
- D. Syngamy.

**Answer: D**



**Watch Video Solution**

**205.** Life span of Parrot is

- A. 15 years

B. 50 years

C. 25 years

D. 140 years.

**Answer: D**



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**206.** Chromosome number in endosperm cell of plant a and in the root apical meristem cell of plant b together equal to chromosome number in shoot apical meristem cell of apple. Plants a and b respectively are

A. Maize, Haplopappus

B. Rice, Potato

C. Rice, Haplopappus

D. Rice, Maize

**Answer: A**



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**207.** The type of syngamy in *Trichonympha* is

A. Hologamy

B. Anisogamy

C. Isogamy

D. Conjugation.



**Answer: A**



**View Text Solution**

**208.** Marchantia is considered heterothallic because it is

- A. Heterogametic
- B. Bisexual
- C. Monoecious
- D. Dioecious.

**Answer: D**



**Watch Video Solution**

**209.** Match the columns and choose the appropriate option.

I

- (a) Rhizome
- (b) Offset
- (c) Sucker
- (d) Leaf buds

II

- (p) *Agave*
- (q) *Bryophyllum*
- (r) *Ginger*
- (s) *Chrysanthemum*
- (t) *Eichhornia*

A. a-r,b-s,c-p,d-q

B. a-s,b-t,c-q,d-r

C. a-r,b-t,c-s,d-q

D. a-q,b-p,c-t,d-s.

**Answer: C**



**Watch Video Solution**

**210.** The motile reproductive structures of algae and fungi, which directly give rise to new individuals are called

A. Zygosporoes

B. Zoospores

C. Cysts

D. Conidia

**Answer: B**



**Watch Video Solution**

**211.** All Albizzia, vegetative propagation takes place with the help of

- A. Fasciculated tuberous roots
- B. Epiphyllous buds
- C. Subaerial branches
- D. Nonfleshy roots.

**Answer: D**



**View Text Solution**

**212.** Which one of the following is wrong about Chara

- A. Globule and nucule present on the same plant
- B. Upper antheridium and lower oogonium
- C. Globule is male reproductive structure
- D. Upper oogonium and lower round antheridium.

**Answer: B**



**Watch Video Solution**

**213.** Planaria possesses high capacity of

- A. Regeneration
- B. Alternation of generations
- C. Bioluminescence

## D. Metamorphosis

**Answer: A**



**Watch Video Solution**

**214.** Which one of the following shows isogamy with non-flagellated gametes

- A. Ectocarpus
- B. Ulothrix
- C. Spirogyra
- D. Sargassum

**Answer: C**



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**215.** Choose the correct pair

- A. Coconut, cucurbits- dioecious
- B. Honeybee, rotifers-parthenogenesis
- C. Ornithorhyncus, whale - viviparity
- D. Frog, peacock - external fertilization.

**Answer: B**



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**216.** Apomixis is

- A. Formation of seeds by fusion of gametes
- B. Formation of seeds without syngamy and meiosis
- C. Formation of seeds with syngamy but no meiosis
- D. None of the above.

**Answer: B**



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**217.** Which of the following organisms breeds only once in life time

- A. Bamboo
- B. Oysters



C. Pelagic fishes

D. Birds

**Answer: A**



**Watch Video Solution**

**218.** Flowers are unisexual in

A. Pea

B. Cucumber

C. China Rose

D. Onion.

**Answer: B**



**Watch Video Solution**

**219.** Which of the following is not correctly matched

- A. Offset- Water Hyacinth
- B. Rhizome-Banana
- C. Binary fission - Sargassum
- D. Conidia- Penicillium.

**Answer: C**



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220. Which of the following plants does not help in vegetative propagation by leaves

A. Begonia

B. Kalanchoe

C. Bryophyllum

D. Oxalis.

**Answer: D**



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221. Which one of the following is not a natural method of vegetative propagation

A. Runner

B. Foliar buds

C. Stem tuber

D. Grafting.

**Answer: D**



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**222. Match the columns and choose the correct option**

I	II
a. Yeast	i. Fragmentation
b. <i>Penicillium</i>	ii. Zoospores
c. Filamentous algae	iii. Budding
d. <i>Chlamydomonas</i>	iv. Conidia

A. a-iii, b-iv, c-I, d-ii

B. a-ii, b-iii,c-I,d-iv

C. a-iv, b-iii,c-ii,d-i

D. a-iii,b-ii,c-I,d-iv.

**Answer: A**



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**223.** The type of reproduction adopted by an organism depends on

A. Habitat and morphology of organism

B. Morphology of an organism

C. Morphology and physiology of an organism

D. Organism's habitat, physiology and genetic make up.

**Answer: D**



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**224.** Some plants flower only once in their life, generally after 50-100 years. They produce a large number of fruits and die

A. *Strobilanthus kunthiana*

B. Bamboo

C. *Callistemon linearis*

D. *Cymbopogon reptans*.

**Answer: B**



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**225.** A true fruit is the one in which the fleshy part of the fruit is derived from

A. Thalamus

B. Ovary

C. Inflorescence axis

D. Apocarpous gynoecium.

**Answer: B**



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**226.** Identify the wrong statement

- A. Plants produced vegetatively or asexually are called clones
- B. Organisms exhibiting external fertilization release a large number of gametes
- C. Development of embryo from fertilized female gamete is called parthenogenesis
- D. Conidia are formed in *Alternaria*



**Answer: C**



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**227.** With respect to Eichhornia

Statement X. It drains off oxygen from water and is seen growing in standing water.

Statement Y. It is an indigenous species of our country

- A. Both statements X and Y are wrong.
- B. Only statement Y is correct, X is wrong
- C. Both the statements X and Y are correct.
- D. Only statement X is correct, Y is wrong.

**Answer: D**



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**228.** The chromosome number in meiocyte is 34. The organism could be

A. Apple

B. Onion

C. Dog

D. Ophioglossum.

**Answer: A**



**Watch Video Solution**

**229.** Stock and scion are used in :

- A. Cutting
- B. Grafting
- C. Layering
- D. Micropropagation.

**Answer: B**



**Watch Video Solution**

**230.** The fertilization in plants was discovered by

- A. Strasburger

B. Nawaschin

C. Hoffmeister

D. Leeuwenhoek.

**Answer: A**



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**231.** Identify from the following group of animals which exhibit oestrus cycle

A. Lion, deer, dog and cow

B. Cow, monkey, elephant and ape

C. Monkey, ape, man and elephant

D. Lion, dog, monkey and ape.

**Answer: A**



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**232.** \_\_\_ is the most convenient and cheap method of artificial vegetative propagation

A. Grafting

B. Budding

C. Cutting

D. Micropropagation.

**Answer: C**



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233. Asexual reproduction through formation of gemmule occurs in

A. Ascidia

B. Hydra

C. Planaria

D. Spongilla.

**Answer: D**



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**234.** The employes sexual reproduction

A. Amoeba

B. Euglena

C. Plasmodium

D. Sycon.

**Answer: D**



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**235.** Arrange the following in descending order

(a) Number of bivalents formed during meiosis of a spore mother of Ophioglossum

(b) Number of chromatids seen on equator at metaphase I in pollen mother cell of *Haplopappus gracilis* during meiosis

(c ) Number of chromosomes found at one pole after anaphase II during meiosis in butterfly

(d) Total number of chromosomes found in all daughter cells formed during meiosis from one megaspore mother cell in Potato

A. b,d,c,a

B. a,c,d,b

C. a,d,c,b

D. d,c,b,a

**Answer: B**





**236.** Assertion (A). Sugar Beet, Cabbatge, Carrot like plants are monocarpic

Reasson (R ). Both vernalisation and photoperiodism are related to flowering

- A. A and R are true and R is correct explanation of A
- B. A and R are true and R is not correct explanation of A
- C. A is true, R is false
- D. A is false, R is true.

**Answer: B**

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237. The term 'terror of Bengal' is used for

A. Erythroxyllum

B. Eichhornia

C. Echinus

D. Echidna.

**Answer: B**

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**238.** Arrange the following in the ascending order based on their chromosome number (i) Primary endosperm cell of Maize (ii) Meristematic cell of Apple (iii) Xylem parenchyma cell of Potato (iv) Aleurone layer cell of Rice.

A. iv, i, ii, iii

B. iii, iv, i, ii

C. i, ii, iv, iii

D. ii, iii, i, iv

**Answer: D**



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**239.** Match the columns and find the correct combination

I	II
(a) Yeast	(i) Reproduction by true regeneration
(b) Plamaria	(ii) Reproduction by budding
(c) Mules	(iii) Multiply by fragmentation
(d) Protonema of mosses	(iv) Do not reproduce

A. a-I,b-ii,c-iii,d-iv

B. a-iv,b-iii,c-ii,d-i

C. a-iii,b-iv,c-I,d-ii

D. a-ii,b-I,c-iv,d-iii

**Answer: D**



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**240.** Which one of the following statements is not correct

A. Water Hyacinth, growing in standing water, drains oxygen from water that leads to death of fishes

B. Offspring produced by asexual reproduction are called clone

C. Microscopic, motile asexual reproductive structures are called zoospores

D. In Potato, Banana, and Ginger, the plantlets arise from internodes present in the modified stem.

**Answer: D**



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**241.** Which one of the following generates new genetic combinations leading to mutations

- A. Nucellar polyembryony
- B. Vegetative reproduction
- C. Parthenogenesis
- D. Sexual reproduction

**Answer: D**



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242. Which is used to maintain genetic trait of a green plant

A. Propagation through seed germination

B. Propagation through vegetative multiplication

C. Generating hybrids through intergeneric pollination

D. Treating seeds with gamma radiations.

**Answer: B**



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**Check Your Grasp**

1. Shoot is pruned and lower part covered with soil in

- A. Mound layering
- B. Serpentine layering
- C. Air layering
- D. Sugarcane.

**Answer:**



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2. In Rubber plant, horticultural multiplication is carried out by



A. Stem cutting

B. Grafting

C. Air layering

D. Roots

**Answer:**



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**3. Panmictic plant multiplies**

A. Sexually

B. Asexually

C. Parthenogenetically

D. By stolons.

**Answer:**



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4. What is the best time for growth of cuttings

A. Summer

B. Winter

C. Spring

D. Both spring and rainy season.

**Answer:**



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5. Which hormone promotes rootings in cuttings

- A. Gibberellin
- B. Cytokinin
- C. Auxin
- D. None of the above.

**Answer:**



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6. The auxin commonly used in promoting rootings of cuttings is

A. NAAM

B. IBA

C. NAA

D. Both B and C.

**Answer: D**



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7. Grafting results in

A. Mixing of traits of two varieties without resorting to hybridisation

- B. Providing hormones and stimulating chemicals from stock to scion
- C. Quick growth of desirable variety with poor root system
- D. All the above

**Answer:**



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**8. Multiple shoot culture requires**

- A. NAA
- B. High salt content

C. Subculturing

D. All the above

**Answer:**



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**9.** Callus develops roots if medium is supplied with

A. Cytokinin

B. Auxin

C. Both cytokinin and auxin

D. More cytokinin and less auxin.

**Answer:**



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**10. Who performed embryo culture for the first time ?**

A. Laibach

B. White

C. Skoog and Miler

D. Harrie and Matkins.

**Answer:**



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11. Barski et al (1960) are famous for successful

- A. Tissue culture clones
- B. Morphogenesis in tissue culture
- C. Protoplast fusion
- D. Shoot tip culture.

**Answer:**



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12. Axenic culture is

- A. Culture of callus



- B. Culture containing embryoids
- C. Culture devoid of nutrients
- D. Culture without contamination.

**Answer: D**



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**13. An economically useful somaclonal variation is**

- A. Short duration Sugarcane
- B. High protein content in Potato
- C. Leaf hopper resistance in Rice
- D. All the above

**Answer:**



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**14.** Autoclaving for tissue culture apparatus involves

- A. Heating at  $120^{\circ} C$  for 15-30 minutes
- B. Cooling at  $-5^{\circ} C$  for 60 minutes
- C. Cooling at  $-25^{\circ} C$  for 1 week
- D. Heating at  $100^{\circ} C$  for 2-3 hours.

**Answer: A**



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15. Embryo culture is performed to

- A. Develop seeds quickly
- B. Overcome dormancy and multiple difficult hybrids
- C. Raise a large number of plants from cells of embryo through shaking
- D. Overcome the requirement of fertilization.

**Answer: B**



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16. Artificial parthenogenesis was studied first by

A. Loeb

B. Owen

C. Bonnet

D. Tyson.

**Answer: A**



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