



BRAINWARE UNIVERSITY

Term End Examination 2021 - 22

Programme – Bachelor of Science (Honours) in Biotechnology

Course Name – Plant Physiology and Biotechnology

Course Code - BBTC202

(Semester II)

Time allotted : 1 Hrs.15 Min.

Full Marks : 60

[The figure in the margin indicates full marks.]

Group-A

(Multiple Choice Type Question)

1 x 60=60

Choose the correct alternative from the following :

- (1) 0.6M Mannitol solution is an example of

a) Isotonic solution	b) Hypotonic solution
c) Hypertonic solution	d) None of these
- (2) The possible way to develop a virus free plantlet using

a) Mesophyll protoplast culture	b) Meristem tissue culture
c) Callus tissue culture	d) Seed culture
- (3) Flavonoids is an example of

a) Plant growth regulator	b) Plant primary metabolites
c) Plant secondary metabolites	d) None of these
- (4) Restriction enzymes was discovered by

a) Nathan, Arber and Smith in 1970	b) Watson, Crick and Wilkins in 1970
c) Boyer and Cohen in 1975	d) Paul Berg in 1975
- (5) Haploid plants can be obtained through

a) Meristem culture	b) Embryo culture
c) Endosperm culture	d) Pollen culture
- (6) Agar agar, used in plant tissue culture is extracted from

a) Fungi	b) Bacteria
c) An algae	d) Virus
- (7) The space between the cell wall and plasma membrane in a plasmolysed cell is filled with

- a) Isotonic solution
c) Hypertonic solution
- b) Hypotonic solution
d) Water
- (8) One chemical reagent in protoplast fusion is
- a) Polyethylene glycol (PEG)
c) Indole acetic acid (IAA)
- b) Adenosine tri phosphate (ATP)
d) Cytokinin
- (9) A technique of micropropagation is
- a) Multiple root production
c) Growth of microorganisms on culture medium
- b) Somatic embryogenesis
d) Multiple shoot production and embryo rescue
- (10) Which plant growth regulator helps in breaking the dormancy of plants?
- a) Auxin
c) Cytokinin
- b) Gibberellin
d) Ethylene
- (11) In plants, water rises upwards through
- a) Cambium
c) Xylem
- b) Stomata
d) Phloem
- (12) Diffusion of water through semipermeable membrane from dilute solution to concentrated solution is
- a) Imbibition
c) Plasmolysis
- b) Osmosis
d) Necrosis
- (13) The membrane which allows the movement of only water molecules to pass through it and not the solute particles
- a) Permeable membrane
c) Impermeable membrane
- b) Semi permeable membrane
d) Not permeable
- (14) The process of imbibition involves
- a) Diffusion
c) Absorption
- b) Capillary action
d) Both Diffusion and Capillary action
- (15) Which of the following hormone is found in gaseous form?
- a) Auxin
c) Cytokinin
- b) Gibberellin
d) Ethylene
- (16) Which plant hormone is helpful in making RNA and protein?
- a) Auxin
c) Cytokinin
- b) Gibberellin
d) Ethylene
- (17) In growth room, humidifier serves as:
- a) Contaminant reducer
c) Medium drying preventer
- b) Humidity reducer
d) Temperature controller
- (18) Plant tissue culture technique is a redefined method of _____
- a) Hybridization
c) Asexual Reproduction
- b) Vegetative Propagation
d) Selection
- (19) The enzymes required to obtain wall-free / naked protoplasts are:
- a) Cellulase and Proteinase
c) Cellulase and amylase
- b) Cellulase and Pectinase
d) Amylase and Pectinase

- (20) The first transgenic crop was
- a) Pea
 - b) Tobacco
 - c) Flax
 - d) Cotton
- (21) What is meant by 'Organ culture'?
- a) Maintenance alive of a whole organ, after removal from the organism by partial immersion in a nutrient fluid
 - b) Introduction of a new organ in an animal body with a view to create genetic mutation in the progenies of that animal
 - c) Cultivation of organs in a laboratory through the synthesis of tissues
 - d) The aspects of culture in community which are mainly dedicated by the need of a specified organ of the human body
- (22) Organogenesis is:
- a) formation of callus tissue
 - b) formation of root and shoots on callus tissue
 - c) both (formation of callus tissue) and (formation of root and shoots on callus tissue)
 - d) genesis of organs
- (23) Which breeding method uses a chemical to strip the cell wall of plant cells of two sexually incompatible species?
- a) Mass selection
 - b) Protoplast fusion
 - c) Transformation
 - d) Transpiration
- (24) Subculturing is similar to propagation by cuttings because
- a) it separates multiple microshoots and places them in a medium
 - b) it uses scions to produce new microshoots
 - c) they both use in vitro growing conditions
 - d) All of these
- (25) The living cell of xylem is known as:
- a) Xylem parenchyma
 - b) Xylem vessel
 - c) Tracheid
 - d) Trachea
- (26) Which of the following part of xylem can store food?
- a) Xylem parenchyma
 - b) Xylem vessel
 - c) Tracheid
 - d) Trachea
- (27) Sieve plate is found in:
- a) Xylem
 - b) Phloem
 - c) Xylem parenchyma
 - d) Phloem parenchyma
- (28) Xylem or phloem fiber function as:
- a) Supporting element
 - b) Food storing area
 - c) Both are true
 - d) None of these
- (29) Transport of Organic Substances in plant is known as:
- a) Transpiration
 - b) Transformation
 - c) Translocation
 - d) Transfer
- (30) Plant has storage organ in the form of:
- a) Tuber
 - b) Leaf
 - c) Stem
 - d) Bud
- (31) Which of the following is a macronutrient?

- a) Iron
c) Cobult
- (32) Which of the following is a micronutrient?
a) Carbon
c) Iron
- (33) Deficiency of Nitrogen causes:
a) Dark leaves
c) Reduced growth
- (34) Phosphorus deficiency occurs only in:
a) Stem
c) Root
- (35) Superphosphates are basically:
a) Fertilizers
c) Nonessential elements
- (36) Potassium is generally found lower amount in:
a) Organic soil
c) Both of these
- (37) Murate of Potash is the fertilizer of:
a) Nitrogen
c) Carbon
- (38) Leaf margin necrosis and browning occurs due to lack of:
a) Nitrogen
c) Potassium
- (39) EDTA is acting as:
a) Iron chelating agent
c) Potassium chelating agent
- (40) _____ is involved in carbohydrate metabolism.
a) Nitogen
c) Zinc
- (41) _____ is involved in protein synthesis.
a) Cobult
c) Zinc
- (42) _____ is required for chlorophyll synthesis.
a) Cobult
c) Zinc
- (43) _____ is required for nitrate reductase activity and vitamin synthesis.
a) Molybdenum
c) Zinc
- (44) _____ is essential for enzymes of chlorophyll synthesis.
- b) Nitrogen
d) Zinc
- b) Nitrogen
d) Sulfur
- b) Succulence
d) All of these
- b) Older leaves
d) New leaves
- b) Toxic agents
d) None of these
- b) Mineral soil
d) None of these
- b) Potassium
d) Sulfur
- b) Sulfur
d) Carbon
- b) Sulfur chelating agent
d) All of these
- b) Boron
d) Copper
- b) Boron
d) Copper
- b) Boron
d) Manganese
- b) Boron
d) Manganese

- a) Molybdenum
c) Zinc
- b) Copper
d) Manganese
- (45) _____ is involved in photosynthetic oxygen revolution.
- a) Molybdenum
c) Chlorine
- b) Copper
d) Manganese
- (46) Tannins are used as:
- a) Antioxidant
c) Antidote for heavy metals poisoning
- b) Antidiarrheal
d) All of these
- (47) Colored flavinoids are:
- a) Anthocyanin
c) Lignin
- b) Tannin
d) All of these
- (48) Flavones and Flavonols:
- a) Absorb UV light
c) Appeared to be involved in legume roots in attracting N-fixing bacteria
- b) Are also flower pigments
d) All of these
- (49) Growth curve is _____ shaped curve.
- a) S
c) J
- b) L
d) U
- (50) Ethylene is a _____
- a) Growth inhibitor
c) Growth hormone
- b) Growth promoter
d) Liquid hormone
- (51) Auxin, indole acetic acid (IAA), is transported _____ from the shoot apex.
- a) Upwards
c) Bidirection
- b) Downwards
d) Any one direction
- (52) Which of the following hormone is responsible for apical dominance?
- a) GA3
c) IAA
- b) BAP
d) Ethylene
- (53) The main disadvantage of breeding is:
- a) It's very difficult to execute
c) It's a hard process to understand
- b) It's time taking process
d) None of these
- (54) Plant breeding started for:
- a) Domestication of crops
c) Domestication of weeds
- b) Domestication of wild plants
d) Domestication of animals
- (55) Who had discovered the process crossing can be used as a method to obtain new plant?
- a) Mendel
c) Camerarius
- b) Wallace
d) Francis crick
- (56) To increase breeding effectiveness, Plant breeders generally prefer which of the following tools?
- a) RDT
c) Genetic engineering
- b) Invitro culture
d) All of these

- (57) Plant transformation can be done by:
- a) Micro injection
 - b) Somatic hybridization
 - c) Agrobacterium tumefaciens
 - d) All of these
- (58) To deliver DNA into plant mitochondria, which one of the following tool is widely used?
- a) Gene Gun
 - b) Silicon carbide fiber
 - c) Agrobacterium tumefaciens
 - d) All of these
- (59) A. rhizogenes causes which of the following disease in plants?
- a) Hairy root
 - b) Crown gall
 - c) Both of them
 - d) None of these
- (60) Microinjection can be done _____ days before meiosis.
- a) 28
 - b) 14
 - c) 7
 - d) 3