


PRACTICE SET -1

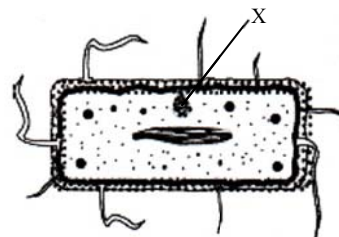
1. The two polypeptides of human insulin are linked together by:
 - a. Hydrogen bonds
 - b. Phosphodiester bond
 - c. Covalent bond
 - d. Disulphide bridges
2. Select incorrect statement w.r.t. the following group or organisms and their characteristics.
 - a. Chrysophyte – Includes diatoms and desmids, Planktonic organism
 - b. Dinoflagellate – Mostly marine and photosynthetic, cell wall has stiff cellulosic plate on outer surface
 - c. Euglenoids – Majority of them are fresh water, cell wall is absent
 - d. Slime mould – Saprophytic motile spores with true walls
3. The coconut water from tender coconut represents:
 - a. Endocarp
 - b. Fleshy mesocarp
 - c. Free nuclear proembryo
 - d. Free nuclear endosperm
4. Select incorrect option w.r.t. viral disease in both plant and animal.

Plant disease		Animal disease
a. Leaf rolling	—	Mumps
b. Yellowing	—	Herpes
c. Vein clearing	—	Influenza
d. Damping off	—	Diphtheria
5. Gametophyte of bryophyte is:
 - a. Green and vascular
 - b. Independent, multicellular
 - c. Dependent on sporophyte
 - d. Foliose in nature
6. Which of the following features is not present in the phylum – Arthropoda?
 - a. Chitinous exoskeleton
 - b. Metameric segmentation
 - c. Parapodia
 - d. Jointed appendages
7. Select incorrect option w.r.t. given diagram.



 - a. Heterosporous
 - b. Aquatic fern
 - c. Belongs to class Pteropsida
 - d. Gametophytic main plant body
8. The leaf of Pinus is
 - a. Needle-shaped
 - b. Compound leaf
 - c. Having veinlets
 - d. Non-cutinised
9. Which of the following most appropriately describes haemophilia?
 - a. Recessive gene disorder
 - b. X-linked recessive gene disorder
 - c. Chromosomal disorder
 - d. Dominant gene disorder
10. Select correct option w.r.t. Rhizophora
 - (a) Grows in swampy area
 - (b) Pneumatophores are present of respiration
 - (c) Is halophyte
 - (d) Shows in situ germination of seed
 - a. All are correct
 - b. All are correct except (d)
 - c. All are correct except (a) and (d)
 - d. All are correct except (a), (c) and (d)
11. Stirred-tank bioreactors have been designed for:
 - a. availability of oxygen throughout the process
 - b. ensuring anaerobic conditions in the culture
 - c. purification of product
 - d. addition of preservatives to the product
12. Name the chronic respiratory disorder caused mainly by cigarette smoking:
 - a. Emphysema
 - b. Asthma
 - c. Respiratory acidosis
 - d. Respiratory alkalosis
13. Which of the following is not a component of downstream processing?
 - a. Preservation
 - b. Expression
 - c. Separation
 - d. Purification
14. Which of the following restriction enzymes produces blunt ends?
 - a. Xho I
 - b. Hind III
 - c. Sal I
 - d. Eco RV
15. Mitochondria and chloroplast are:
 - (a) semi-autonomous organelles.
 - (b) formed by division of pre-existing organelles and they contain DNA but lack protein synthesising machinery
 Which one of the following options is correct?
 - a. Both (a) and (b) are correct
 - b. (b) is true but (a) is false
 - c. (a) is true but (b) is false
 - d. Both (a) and (b) are false

16. How many hot spots of biodiversity in the world have been identified till date by Norman Myers?
a. 34 b. 43 c. 17 d. 25
17. The primary producers of the deep-sea hydrothermal vent ecosystem are:
a. Blue-green algae b. Coral reefs
c. Green algae d. Chemosynthetic bacteria
18. Which of the following is **correct** for r-selected species?
a. Small number of progeny with small size
b. Small number of progeny with large size
c. Large number of progeny with small size
d. Large number of progeny with large size
19. Photosensitive compound in human eye is made up of:
a. Guanosine and Retinol
b. Opsin and Retinal
c. Opsin and Retinol
d. Transduction and Retinene
20. Which of the following is correctly matched?
a. *Parthenium hysterophorus* – Threat to biodiversity
b. Stratification – Population
c. Aerenchyma – Opuntia
d. Age pyramid – Biome
21. Red list contains data or information on:
a. threatened species
b. marine vertebrates only
c. all economically important plants
d. plants whose products are in international trade
22. Which one of the following is wrong for fungi?
a. They are heterotrophic
b. They are both unicellular and multicellular
c. They are eukaryotic
d. All fungi possess a purely cellulosic cell wall
23. Which of the following is required as inducer(s) for the expression of Lac operon?
a. glucose b. galactose
c. lactose d. lactose and galactose
24. Select the wrong statement:
a. Diatoms are chief producers in the oceans
b. Diatoms are microscopic and float passively in water
c. The walls of diatoms are easily destructible
d. 'Diatomaceous earth' is formed by the cell walls of diatoms.
25. The label of a herbarium sheet does not carry information on:
a. local names b. height of the plant
c. date of collection d. name of collector
26. Microtubules are the constituents of:
a. Cilia, Flagella and Peroxisomes
b. Spindle fibres, Centrioles and Cilia
c. Centrioles, Spindle fibres and Chromatin
d. Centrosome, Nucleosome and Centrioles
27. Which one of the following statements is wrong?
a. Agar-agar is obtained from *Gelidium* and *Gracilaria*
b. *Laminaria* and *Sargassum* are used as food
c. Algae increase the level of dissolved oxygen in the immediate environment
d. Algin is obtained from red algae, and carrageenan from brown algae.
28. The term 'polyadelphous' is related to
a. Corolla b. Calyx
c. Gynoecium d. Androecium
29. How many plants among *Indigofera*, *Sesbania*, *Salvia*, *Allium*, *Aloe*, mustard, groundnut, radish, gram and turnip have stamens with different lengths in their flowers?
a. Five b. Six c. Three d. Four
30. Asthma may be attributed to:
a. bacterial infection of the lungs
b. allergic reaction of the mast cells in the lungs
c. inflammation of the trachea
d. accumulation of fluid in the lungs
31. Free-central placentation is found in:
a. Brassica b. Citrus c. Dianthus d. Argemone
32. Cortex is the region found between:
a. Endodermis and pith
b. Endodermis and vascular bundle
c. Epidermis and stele
d. Pericycle and endodermis
33. The Avena curvature is used for bioassay of:
a. ABA b. GA₃ c. IAA d. Ethylene
34. Some bacterial cells were fixed for microscopic observation. A certain labelled structure X was observed on most occasions at the cell membrane.



In the given illustration, label X represents
a. nucleoid b. plasmids c. ribosomes d. mesosome

49. Which of the following approaches does not give the defined action of contraceptive?

a.	Barrier methods	Prevent fertilization
b.	Intra uterine devices	Increase phagocytosis of sperms, suppress sperm motility and fertilising capacity of sperms
c.	Hormonal contraceptives	Prevent/retard entry of sperms, prevent ovulation and fertilisation
d.	Vasectomy	Prevents spermatogenesis

50. Which of the following depicts the correct pathway to transport of sperms?

- Rete testis → Vas deferens → Efferent ductules → Epididymis
- Efferent ductules → Rete testis → Vas deferens → Epididymis
- Rete testis → Efferent ductules → Epididymis → Vas deferens
- Rete testis → Epididymis → Efferent ductules → Vas deferens

Answers and Solutions

- (d) The two polypeptides of human insulin are linked together by disulphide bridges.
- (d) Slime mould – Saprophytic motile spores with true walls.
- (d) The coconut water from tender coconut represents free nuclear endosperm.
- (d) Damping off — Diphtheria
- (b) Gametophyte of bryophyte is independent, multicellular.
- (c) In Polychaeta, usually biramous, muscular, lateral projections of the body, paired and extending from the body segments, more or less compressed laterally, and bearing setae; in free-swimming forms they are used for locomotion, and in sessile forms to fan water.
- (d) Gametophytic main plant body
- (a) Needle-shaped. Typical short shoots in *Pinus* monophylla have one single needle leaf preceded by some scale leaves and are inserted in the axils of scaly, long, shoot leaves.
- (b) X-linked recessive gene disorder
- (a) (All are correct)
(a) Grows in swampy area
(b) Pneumatophores are present of respiration
(c) Is halophyte
(d) Shows *in situ* germination of seed
- (a) Availability of oxygen throughout the process.
- (a) The chronic respiratory disorder caused mainly emphysema by cigarette smoking.
- (b) Emphysema a condition in which air is abnormally present within the body tissues.
- (d) *EcoRV* (pronounced "eco R five") is a type II restriction endonuclease isolated from certain strains of *Escherichia coli*. In molecular biology, it is a commonly used restriction enzyme. It creates blunt ends.
- (c) Semi-autonomous organelles is true but formed by division of pre-existing organelles and they contain DNA but lack protein synthesising machinery is false.
- (a) 34 hotspots of biodiversity in the world have been identified till date by Norman Myers.
- (d) Chemosynthetic bacteria
- (c) Large number of progeny with small size
- (b) Photosensitive compound in human eye is made up of opsin and retinal.
- (a) *Parthenium hysterophorus*—Threat to biodiversity
- (a) Threatened species
- (d) All fungi possess a purely cellulosic cell wall
- (c) Lactose is required as inducer for the expression of Lac operon.
- (c) The walls of diatoms are easily destructible.
- (b) Height of the plant
- (b) Microtubules are the constituents of Spindle fibres, Centrioles and Cilia.
- (d) Algin is obtained from red algae, and carrageenan from brown algae.
- (d) Androecium, the stamens of a flower collectively, united by the filaments into three or more sets or bundles, having stamens joined by their filaments into a number of clusters origin of polyadelphous from classical Greek polyadelphous.

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29. (d) Four
30. (b) Asthma may be attributed to allergic reaction of the mast cells in the lungs.
31. (c) Free-central placentation is found in dianthus.
32. (c) Cortex is the region found between epidermis and stele.
33. (c) The Avena curvature is used for bioassay of IAA.
34. (d) Mesosome
35. (a) Bacterium
36. (b) The genetic material inside a bacterial cell is present as a nucleoid.
37. (a) The crossing over in meiosis occurs during prophase I.
38. (b) In meiosis, the sister chromatids separate from the centromere during anaphase II.
39. (a) Best material for the study of mitosis is root tip.
40. (c) LH and FSH decrease gradually during the follicular phase.
41. (b) Metaphase cell cycle stage are suitable condensed chromosomes found so that their morphology can be studied.
42. (d) Single-stranded
43. (c) In the cell cycle, the separation of sister chromatids begins during the anaphase.
44. (c) An autoimmune disease is a condition in which your immune system mistakenly attacks your body.
45. (a) In potato, banana and ginger, the plantlets arise from the internodes present in the modified stem.
46. (d) Proximal convoluted tubule is the part of nephron. involved in active reabsorption of sodium.
47. (b) A-2, B-3, C-4, D-1
48. (d) No sperm occurs in epididymis
49. (d) Vesectomy → Prevents spermatogenesis
50. (c) Rete testis → Efferent ductules → Epididymis → Vas deferens