

Time: One Hour

Max. Marks: 25

instructions

- solve any 25 questions.

1 Which of the following is the typical feature of a prokaryotic cell?

- (A)absence of DNA (B)absence of nucleus (C)absence of RNA (D)absence of cell wall

2 The region in prokaryotic cell where double stranded single circular DNA is present is called as

- (A)nucleoplasm (B)nuclues (C)nucleoid (D)protonucleus

3 Ribosomes in prokaryotic cells are

- (A)80 S (B)70 S (C)60S + 40 S (D)50S + 40 S

4 Extra chromosomal self-replicating ds circular DNA molecules present in bacteria are called

- (A)episomes (B)plasmid (C)plastid (D)extra chromosomes

5 The membranous infolding which is thought to be the site of DNA replication in bacteria is called

- (A)plasmids (B)nucleoids (C)mesosomes (D)pili

6 The cell wall of eubacteria is made up of

- (A)cellulose (B)peptidoglycan (C)phospholipids (D)chitin

7 The extracellular appendage which helps in movement in bacteria

- (A)pili (B)flagella (C)flagellin (D)capsule

8 Extremely fine extracellular structures involved in cell to cell contact is

- (A)flagella (B)cilia (C)pili (D)spinae

9 In some bacteria, there is a slimy layer outside to cell wall considered as virulence factor is called

- (A)capsule (B)plasmid (C)outer layer (D)fimbriae

10 Which of the following are characteristics of prokaryotic cells?

- (A)Absence of nucleus (B)Absence of cell organelles (C)Presence of 70S ribosomes (D)All of the above

11 This is not the function of plasma membrane

- (A)Energy transduction (B)Intercellular interactions (C)Responding to external stimuli (D)Assisting in chromosome segregation

12 In the plasma membrane, carbohydrates

- (A)always faces outwards, towards extracellular space (B)directed to all sides in the membrane randomly (C)always faces to the lumen of cells (D)always faces inward to the nonpolar portion of the membrane

13 In the plasma membrane, Glycolipids are usually situated in

- (A)cannot be predicted, it varies according to the cell types (B)inner leaflet of the plasma membrane (C)the outer leaflet of the plasma membrane (D)evenly distributed in both outer and inner leaves of plasma membrane

14 The major interaction responsible for stabilizing plasma membrane

- (A)hydrophobic interactions (B)hydrophilic interactions (C)covalent bonds (D)ionic bonds

15 In the plasma membrane, lipid molecules are arranged in

- (A)head parallel (B)alternate (C)scattered (D)series

16 Ion carriers are located in

- (A)Plasma membranes (B)Cell wall (C)Nucleus (D)Cellular space

17 In the plasma membrane, the best method to study the properties of integral membrane proteins is

- (A)atomic force microscopy (B)freeze-fracture analysis and electron microscopy (C)cryo-sectioning and electron microscopy (D)all of the above

18 In the plant cell, this layer is present nearest to the plasma membrane

- (A)Tonoplast (B)Middle lamella (C)secondary wall (D)primary wall

19 Beetroot, if kept in cold water, anthocyanin does not come out due to plasma membrane

- (A)Dead (B)differentially permeable (C)permeable to anthocyanins (D)Impermeable to anthocyanins

20 Plasma membrane is made up of

- (A)A protein, a lipid and a cellulose layer (B)Bimolecular lipid layer surrounded by protein layers (C)A protein layer between two lipid layers (D)A lipid layer between two protein layers

21 Cristae in mitochondria serves as sites for

- (A)oxidation reduction reaction (B)protein synthesis (C)macromolecules breakdown (D)flavoproteins are phosphorylated

22 Pick the incorrect statement

- (A)mitochondrial DNA is known as mtDNA (B)mitochondria is the powerhouse of the cell (C)mitochondria is the site for calvin cycle (D)mitochondria is the site for krebs cycle and oxidative phosphorylation

23 Inner membrane of mitochondria is rich in phospholipid \_\_\_\_\_

- (A)phosphatidylserine (B)phosphatidylinositol (C)phosphatidylcholine (D)cardiolipin

24 Mt DNA is

## Examination October 2020

- (A) simple single stranded circular DNA molecule (B) simple double stranded circular DNA molecule (C) Simple double stranded linear DNA molecule (D) Simple single stranded linear DNA molecule
- 25 Inner mitochondrial membrane has  
(A) cytochrome oxidase complex (B) b-c 1 complex (C) NADH dehydrogenase complex (D) all of the above
- 26 This is not a function of mitochondria  
(A) fatty acid breakdown (B) non-shivering thermogenesis (C) Electron transport chain and associated ATP production (D) Glycolysis and associated ATP production
- 27 This statement is incorrect about mitochondrial membrane  
(A) outer membrane is permeable to all molecule types (B) outer membrane resembles a sieve (C) outer membrane embeds enzymes of electron transfer chain (D) none of these
- 28 Oxysomes of F<sub>0</sub>-F<sub>1</sub> particles take place on  
(A) Chloroplast surface (B) Thylakoid (C) Inner mitochondrial membrane (D) Mitochondrial surface
- 29 Pick the incorrect statement  
(A) Generally, chloroplasts are larger than mitochondria (B) Mitochondria and chloroplasts both have DNA (C) Mitochondria and chloroplasts both contain an outer and inner membrane (D) Mitochondria and chloroplasts both have an internal compartment, the thylakoid space bound by thylakoid membrane
- 30 Typically, the inner membrane of mitochondria is highly convoluted to form a series of infolding known as  
(A) grana (B) thylakoids (C) cristae (D) lamellae