

REDEEMED CHRISTIAN FELLOWSHIP (RCF)

BIO 101

Instructions: Answer all questions.

Time allowed:

- 1) The following are functions of leucoplasts except
 - a) Bulk storage of starch, lipid or proteins
 - b) Synthesis of fatty acids and amino acids
 - c) Synthesis of tetrapyrrole compounds such as haem
 - d) Assists in energy production

- 2) The lysosome is formed from the
 - a) Rough endoplasmic reticulum
 - b) Smooth endoplasmic reticulum
 - c) Nucleus
 - d) Mitochondrion

- 3) Enzymes of the lysosome work optimally at a pH of?
 - a) 4
 - b) 5
 - c) 6
 - d) 7

- 4) Ribosomes are found in groups called
 - a) Peroxisomes
 - b) Polysomes
 - c) Monosomes
 - d) Lysosomes

- 5) Which of the following statements is true about the vacuole
 - a) It plays a major role in autophagy
 - b) It aids the digestion of invading bacteria
 - c) It can digest food
 - d) All of the above

- 6) A pair of short microtubules involved in cell division is called?
 - a) Undulipodium
 - b) Microvillus
 - c) Centriole
 - d) Cytoskeleton

- 7) One of the following is not true about a chromosome
 - a) It is darkly colored when stained
 - b) It contains DNA

- c) It consists of two arms with a centrosome
 - d) Sister chromatids are joined together by the centromere
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- 8) The process whereby stretches of Dna are copied into the related nucleic acid RNA is called?
 - a) Translocation
 - b) Mutation
 - c) Transcription
 - d) Mutarotation
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- 9) One of the following is true about DNA
 - a) Eukaryotic organisms store their DNA inside the cell cytoplasm
 - b) Prokaryotic organisms store their DNA inside the cell nucleus
 - c) Eukaryotic organisms store their DNA inside the ribosomes
 - d) Prokaryotic organisms store their DNA in the cell's cytoplasm
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- 10) The following are characteristics of prokaryotic cells except
 - a) They are small cells (<5mm)
 - b) DNA is linear and associated with proteins to form chromatin
 - c) No nucleus or any membrane bound organelle
 - d) Cells divide by binary fission
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- 11) Series of membrane bound channels involved in the synthesis and transport of materials, mainly lipids are?
 - a) Rough endoplasmic reticulum
 - b) Smooth endoplasmic reticulum
 - c) Golgi apparatus
 - d) Mitochondria
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- 12) The following are characteristics of eukaryotic cells except
 - a) Reproduction is only asexual
 - b) Cell division is by mitosis or meiosis
 - c) Motility is by flexible waving undulipodium made of tubulin
 - d) Ribosomes are large (80S)
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- 13) The principal means of passive transport in cell membrane is?
 - a) Absorption
 - b) Reabsorption
 - c) Diffusion
 - d) Retention
-
- 14) The following will affect the rate of diffusion of a molecule except
 - a) The kinetic energy of the molecule
 - b) The solubility of the molecule
 - c) The size of the molecule

d) The charges on the molecule

15) The difference between diffusion and osmosis is?

- a) The permeability of the cell membrane is reduced in osmosis
- b) The size of the molecule is reduced in osmosis
- c) The movement of the molecule from region of higher concentration to region of lower concentration in osmosis
- d) Movement of water from region of higher concentration to region of lower concentration in osmosis

16) Which of the following statements is true about the cell membrane

- a) Markers on a cell membrane serve to transmit signals into the cell membrane
- b) The cell membrane consists of a layer of amphiphatic lipids which arrange so that their hydrophilic tail regions are shielded from the extracellular faces of the membrane
- c) The continuous spherical lipid layer of the cell membrane is about 7mm thick
- d) The arrangement of the lipid bilayer prevents hydrophobic solutes from passively diffusing across the cell membrane

17) The length of the mitochondrion is

- a) 8 μ m
- b) 8nm
- c) 18 μ m
- d) 18nm

18) One of the following is true about endocytosis

- a) Pinocytosis refers to the process of engulfing large particles
- b) Phagocytosis refers to the process of engulfing large particles
- c) Vacuoles are formed from the inner mitochondrial membrane of the cell
- d) Cholesterol is carried by high density lipids

19) At metaphase, chromosomes are individually arranged on the

- a) Metaphase plate
- b) Metaphase plane
- c) Middle of the cell
- d) All of the above

20) In the centromere, a distant point of attachment for fibers that make up the mitotic and meiotic spindle apparatus is called?

- a) Kinetochore
- b) Kinetomere
- c) Kinetosome
- d) Kinetochrome

21) Blood is a

- a) Tissue
- b) Cell

- c) Organ
 - d) System
- 22) Endocytosis is an example of
- a) Movement of materials out of the cell
 - b) Movement of materials inside the cell
 - c) Movement of toxic substances inside the cell
 - d) All of the above
- 23) The respiratory system in Amoeba, tapeworm and arthropods are _____
- a) Body surface, cell membrane, tracheal system
 - b) Moist skin, lung body, mouth
 - c) Lungs, lungs, gills
 - d) Gills, lungs, body surface
- 24) Phosphorylation is the _____
- a) Addition of ADP to an inorganic phosphate group
 - b) Removal of ADP from an inorganic hydrogen bond
 - c) Beginning of ATP
 - d) None of the above
- 25) The process by which nervous system converts stimuli into electrical impulses is
- a) Transportation
 - b) Transcription
 - c) Transduction
 - d) Translocation
- 26) Photosynthesis requires two stages namely
- a) Light and photosystem
 - b) Phosphorylation and light
 - c) Light and dark
 - d) Dark and glucose
- 27) Carotenoids are divided into
- a) Xanthophyll and fucoxanthin
 - b) Chlorophyll and chromophyll
 - c) Xanthophyll and carotenes
 - d) Diatoms and carotenes
- 28) _____ is the physical differences observed between individuals
- a) Venation
 - b) Continuous
 - c) Dissociation
 - d) Variation
- 29) The features of discrete variations are clearly
- a) Physical

- b) Phenotypic
- c) Genetical
- d) Peripheral

30) When a plant with white seed coats was crossed with gray seed coats; the resulting f1 plants yielded grey seed coats. This is an example of

- a) Dihybrid inheritance
- b) Monohybrid inheritance
- c) Polyhybrid inheritance
- d) I don't know

ANSWERS

1) D

2) A

3) B

4) B

5) D

6) C

7) A

8) C

9) D

10) B

11) B

12) A

13) C

14) B

15) D

16) C

17) A

18) B

19) D

20) A

21) A

22) B

23) A

24) A

25) C

26) C

27) C

28) D

29) C

30) B

ANSWERS

1) D

2) A

3) D

4) B

5) B

6) D

7) D

8) A

9) B

10) C

11) B

12) A

13) C

14) B

15) D

16) B

17) A

- 18) D
- 19) D
- 20) A