CHOOSE THE BEST ANSWER

1. After being formed by the ribosomes located on the endoplasmic reticulum, what is the next organelle to which a protein could be transported?

A) mitochondria

B) smooth endoplasmic reticulum

C) Golgi apparatus

D) nucleus

E) chloroplast

2. Which of the following are involved with the movement or transport of materials or organelles throughout the cell?

A) rough endoplasmic reticulum

B) cytoskeleton

C) smooth endoplasmic reticulum

D) vesicles

E) all of the choices are true

3. Which is NOT a reason for the small size of cells?

A) As the linear dimensions of a cell increase, the volume increases twice as fast as the surface area.

B) Nutrients and wastes must enter and leave the cell through the plasma membrane.

C) The nucleus can only control a certain amount of cytoplasm.

D) The increased number of organelles requires that eukaryotic cells be smaller than prokaryotic cells.

E) Materials must be able to move quickly and efficiently through the cytoplasm.

4. Which is NOT true of eukaryotic cells?

A) A true nucleus contains the chromosomes.

B) Eukaryotic cells contain membrane-bounded compartments.

C) They contain ribosomes that are smaller than those of prokaryotic cells.

D) They all contain mitochondria.

E) They contain many organelles in the cytoplasm.

5. A eukaryotic organelle that can easily be seen with the light microscope is the

A) endoplasmic reticulum.

B) nucleus.

C) ribosome.

D) polyribosome.

E) microtubule.

6. The nucleus is NOT important as the site of

A) DNA synthesis.

B) RNA synthesis.

C) synthesis of ribosomal subunits.

D) protein synthesis.

E) All of these take place in the nucleus

7. Which is NOT a characteristic of mitochondria?

A) A mitochondrion has two membranes.

B) Mitochondria are the site of cellular respiration.

C) Mitochondria are found in prokaryotic and eukaryotic cells.

D) Mitochondria contain DNA and ribosomes.

E) The inner space of the mitochondrion contains a fluid matrix.

8. Actin filaments are

A) also known as microtubules.

B) able to assemble and disassemble from component proteins.

C) found in the center of flagella and cilia.

D) intermediate in size between microtubules and microfilaments.

E) made of different kinds of components in different tissues.

9. The organelle of the endomembrane system associated with the sorting of lipids and proteins for various cellular functions are

A) rough endoplasmic reticula.

B) lysosomes.

C) vesicles.

D) Golgi apparati.

E) None of these

10. Which of the following gives rise to both lysosomes and vesicles?

A) rough endoplasmic reticula

B) mitochondria

C) Golgi apparati

D) ribosomes

E) nucleus

11. In a patient who has become dehydrated,

body water should be replaced by intravenous

infusion of [\*]

A. distilled water

B. 0.9% NaCl

C. 5% dextrose solution

D. hyperoncotic albumin

E. 10% glucose solution

12. Which of the following is matched

incorrectly?

A. Microfilaments: actin, myosin

B. Intermediate filaments: vimentin, keratin

C. Microtubules: clathrin

D. Cytoskeleton: spectrin, ankyrin

13. Which intercellular junctions allow the

passage of small molecules and ions from one

cell to another?

A. Gap junctions

B. Focal adhesions

C. Zonulaoccludens

D. Desmosomes

14. Of the following substances, the lipid bilayer

is most permeable to:

A. sodium

B. urea

C. glucose

D. water

15. The rate of diffusion is inversely

proportional to:

A. surface area available for diffusion

B. thickness of the membrane

C. concentration gradient for the substance

D. diffusion coefficient

16. Which one of the following is an example of

passive transport?

A. Calcium efflux by calcium pump

B. Na-Ca exchanger

C. Potassium efflux through potassium leak

channels

D. Calcium sequestration in sarcoplasmic

Reticulum

17. Most of the ATP generated in nerve cells is

utilized to energize the:

A. Na-Ca exchanger

B. H-ATPase in the cell membrane

C. Na-K ATPase

D. synthesis of proteins

18. Which of the following is incorrectly

matched?

A. Na-K ATPase: antiport

B. H-ATPase: uniport

C. SGLT: symport

D. Ca-ATPase: biport

19. Thin filaments do not contain:

A. actin

B. myosin

C. troponin

D. tropomyosin

20. The ATPase activity of which of the

following proteins is altered to regulate skeletal

muscle contraction?

A. Actin

B. Myosin

C. Troponin

D. Tropomyosin

21. The activity of which contractile protein is

altered to regulate smooth muscle contraction?

A. Actin

B. Myosin

C. Calmodulin

D. Tropomyosin

22. Smooth muscle lacks:

A. actin

B. myosin

C. troponin

D. tropomyosin

23. The major source of calcium for contraction

of skeletal muscle is:

A. ECF

B. cytosol

C. mitochondria

D. sarcoplasmic reticulum (SR)

24. Which of the following muscle types is the

‘fastest’?

A. Skeletal muscle

B. Smooth muscle

C. Cardiac muscle

25. Which of the following statements about

cardiac muscle is incorrect?

A. Summation cannot occur

B. It is a ‘fast’ muscle

C. Slow myosin ATPase activity

D. It contains myoglobin

26. The major functions of the plasma membrane do NOT include

A) separation of the fluid environments inside and outside the cell.

B) regulation of molecules and ions that pass into and out of the cell.

C) recognition and communication between different cells and tissues.

D) maintaining connections between adjacent cells.

E) production of proteins used in construction of the cell wall.

27. Whether a molecule can cross the plasma membrane depends upon

A) the size of the molecule.

B) the shape of the molecule.

C) the chemical properties of the molecule.

D) the charge of the molecule.

E) All of the choices are correct.

28. Sugars and amino acids are carried into the cell by means of

A) facilitated transport.

B) active transport.

C) simple diffusion.

D) endocytosis.

E) exocytosis.

29. Pinocytosis is an example of

A) facilitated transport.

B) active transport.

C) cotransport.

D) endocytosis.

E) exocytosis.

30. Cell products are secreted from the cell through

A) facilitated transport.

B) active transport.

C) cotransport.

D) endocytosis.

E) exocytosis.

31. The packed RBCs are stored at :

A. 4 degree Centigrade

B. 30 degree Centigrade

C. 37 degree Centigrade

D. 20 degree Centigrade

32. Which ONE of these statements concerning platelets is NOT TRUE?

Top of Form

A They extrude their nucleus as they pass through the spleen

B The megakaryocyte matures by endomitotic synchronous replication so that the number of nuclear lobes increases within the cel

C Thrombopoietin is the major regulator of platelet production and is produced by the liver and kidney

D The platelet lifespan is 7-10 days

33. Which ONE of these statements concerning the structure of platelets is NOT TRUE?

Top of Form

A Adhesion to collagen is mediated by glycoprotein Ia (GPIa)

B α‐Granules contain clotting factors, vWF and platelet derived growth factor (PDGF

C HPA‐1a and HPA‐1b are alleles that act as important platelet antigen

D Platelets do not express ABO antigens

34. Which ONE of these statements is NOT TRUE concerning stabilization of the platelet plug by fibrin?

Top of Form

A Following vascular injury, the formation of extrinsic Xase (VIIa, TF, PL and Ca2+) initiates the coagulation cascade

B The incorporation of plasminogen and tPA helps to stabilize the clot

C Thrombin generated at the injury site converts soluble plasma fibrinogen into fibrin

D Platelet aggregation and release reactions accelerate the coagulation process by providing abundant membrane phospholipid

35.

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| --- | --- |
| Acidosis will shift the oxygen-hemoglobin dissociation curve: | |
|  | |
|  | |
| |  |  | | --- | --- | |  | to the right and makes the oxygen more readily available to the tissues. | |  | to the right and makes the oxygen less readily available to the tissues. | |  | to the left and makes the oxygen more readily available to the tissues. | |  | to the left and makes the oxygen less readily available to the tissues. |   36. Which ONE of these statements is NOT TRUE concerning erythropoietin?  Top of Form  A 90% of the hormone is made in the liver  B It contains a hypoxia response gene  C One stimulus to production is a low atmospheric oxygen level  D Levels in blood are high if a tumour secreting erythropoietin is causing polycythaemia but are low in severe renal disease or polycythaemiavera  37. The normal haemostatic response to vascular damage depends on three major factors. Which ONE of these is not included in that group?  Top of Form  A The blood vessel wall  B Stasis of the blood flow  C Circulating platelets  D Blood coagulation factors  38. Which ONE of these statements is TRUE concerning von Willebrand factor?  Top of Form  A It cross‐links platelets to each other  B It carries factor IX  C After release it forms large aggregates that are needed for its function  D Plasma vWF is derived from endothelial cells  39. Which ONE of these statements is TRUE about haemoglobin?  Top of Form  A One molecule contains 1 atom of iron  B It is broken down in macrophages  C It is different in children and adults  D It has a low level in blood at birth compared with adult life |