

**1. Blood cells form about of the blood volume.:**

- A. 45 %
- B. 55 %
- C. 90 %
- D. 60 %

2. All of the following are abnormal RBCs shapes except.....

- A. Spherocytosis
- B. Sickle shape
- C. Swelling
- D. Biconcave disc shape

3. Crenation occurs when RBCs are put into.....

- A. Hypotonic solution
- B. Isotonic solution
- C. Hypertonic solution
- D. None of the above

4. RBCs diameter in macrocytic anemia is.....

- A. 7.5 μm
- B. $>9 \mu\text{m}$
- C. $<6 \mu\text{m}$
- D. 8 μm

5. Anisocytosis means.....

- A. Variable RBCs shapes
- B. Variable RBCs colors
- C. Variable RBCs diameters
- D. Variable RBCs numbers

1. A

2. D

3. C

4. B

5. C

**6. Fresh, single RBC appears.....:**

- A. Red
- B. Greenish yellow
- C. White
- D. Colorless

7. RBCs with normal HB

- A. Appears acidophilic with pale center
- B. Appears pale
- C. Have deeply stained periphery with stained center
- D. Are called hyperchromic

8. Number of RBCs in males is.....

- A. 4-4.5 million / mm³.
- B. 4.5-5 million / mm³.
- C. 5-5.5 million / mm³.
- D. 5.5-6 million / mm³.

9. Increase in RBCs number is called.....

- A. Anemia
- B. Polycythemia
- C. Leukemia
- D. Thrombasthenia

10. Regarding structure of RBCs all of the following is correct except.....

- A. They are non-nucleated cells
- B. They have no organoids
- C. They are filled with HB.
- D. They are surrounded by plastic freely permeable cell membrane,

6. B

7. A

8. C

9. B

10.D



11.plays an important role in transportation of CO₂ from tissues to the lung?

- A. Glycosidase enzyme
- B. Carbonic anhydrase enzyme.
- C. Sulphatase enzyme
- D. Succinic dehydrogenase enzyme

12. Regarding WBCs all of the following is correct except

- A. They are true nucleated cells
- B. They have cell organoids and cell inclusions
- C. They don't contain hemoglobin
- D. Single WBC appears white

13. Leukopenia means.....

- A. WBCs > 11000/ mm³.
- B. WBCs > 150,000 / mm³.
- C. WBCs < 4000 / mm³.
- D. WBCs < 6000 / mm³.

14. Which of the following are non-granular leucocytes

- A. Neutrophils.
- B. Eosinophils.
- C. Basophils
- D. Monocytes

15. The most common leucocytes are.....

- A. Neutrophils
- B. Lymphocytes
- C. Monocytes
- D. Basophils

11.B	12.D	13.C	14.D	15.A
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**16. One of the following is (false) about neutrophil leucocytes?**

- A. Contain fine neutrophilic granules
- B. Secrete proteolytic enzymes.
- C. They attract monocytes to the infected area
- D. Possess horse shoe shaped nucleus

17. Regarding neutrophilic granules which of the following is correct

- A. They are few in number & large in size.
- B. They contain hydrolytic enzymes
- C. They contain bacteriostatic and bactericidal substances
- D. All of the above

18. Regarding nucleus of neutrophils which of the following is correct.....

- A. 2 in number
- B. Lightly stained
- C. Irregular in shape
- D. Segmented

19. All of the following granules are present in neutrophils by EM except.....

- A. Specific granules
- B. Beta granules
- C. Azurophilic granules
- D. Glycogen granules

20. Regarding eosinophilic granules which of the following is correct.....

- A. Basophilic refractile granules by LM
- B. Coarse ellipsoid granules by EM
- C. Have electron lucent crystalloid core in the center and electron dense periphery.
- D. They contain heparin and histamine

16.D

17.C

18.D

19.B

20.B

**21. One of the following is a function of esinophils?**

- A. Antibilharzial and antiparasitic action
- B. They produce heparin and histamine during allergy.
- C. During infections, they stimulate the bone marrow to produce more leucocytes
- D. Penetrate the capillaries and venules to reach the C.T. and transform into macrophages

22. Regarding basophils which of the following is correct

- A. They represents 2- 5% of total leucocytes..
- B. They release eosinophil chemotactic factor.
- C. Basophilic granules can be stained by osmic acid
- D. Their nucleus is bilobed

23.secrete histaminase and sulphatase enzymes during allergy.....

- A. Neutrophils
- B. Basophils
- C. Eosinophils
- D. Monocytes

24. Diameter of medium-sized lymphocytes is.....

- A. 4-7 μm
- B. 6-9 μm
- C. 7-10 μm
- D. 10-15 μm

25. Lymphocytes found in the blood are mainly,

- A. Small sized
- B. Medium sized
- C. Large sized
- D. A & B

21. A

22. B

23. C

24. C

25. D

**26. Regarding small lymphocytes which of the following is correct?**

- A. They represent 5-10% of total leukocytes
- B. Their cytoplasm is abundant
- C. Their nucleus is central, round and dark
- D. Their size is 10-15 μm

27. Most common type of lymphocytes is

- A. T. lymphocytes
- B. B. lymphocytes
- C. Natural killer cells
- D. None of the above

28. Regarding monocytes which of the following is correct.....

- A. They represent 15-20% of total leukocytes
- B. Shows positive peroxidase reaction
- C. Contains specific granules
- D. Responsible for cell mediated immunity

29. Regarding platelets all of the following is correct except.....

- A. They are fragments of cytoplasm covered with membrane but have no nucleus
- B. Their size is 2-4 μm
- C. Their outer part appears transparent and called hyalomere
- D. Their cell membrane is covered with a thin cell coat.

30. Alpha granules of platelets contains

- A. Fibrinogen
- B. Serotonin,
- C. ATP
- D. Calcium

26.C

27.A

28.B

29.D

30.A



1. Red bone marrow in adults is present in all of the following except.....:

- A. Skull
- B. Sternum,
- C. Clavicle
- D. Shaft of long bones

2. Main type of bone marrow in fetus is.....

- A. Red bone marrow
- B. Yellow bone marrow
- C. Inactive bone marrow
- D. None of the above

3. Largest cells in bone marrow are.....

- A. Reticular cells
- B. Fat cells
- C. Free cells
- D. Osteoblasts

4. Stroma of bone marrow contains all of the following except.....

- A. C.T cells
- B. Pericytes
- C. Bone cells
- D. Chondroblasts

5. Yellow bone marrow doesn't contain.....

- A. Bone cells
- B. Fat cells
- C. Free cells
- D. Pericytes

1. D

2. A

3. B

4. D

5. C

**6. Developing leucocytes in bone marrow are called.....:**

- A. Myeloid tissue
- B. Erythroid tissue
- C. Lymphoid tissue
- D. None of the above

7. Regarding free cells in bone marrow which of the following is correct

- A. They are blood cells in mature state only
- B. Developing erythrocytes is called myeloid tissue
- C. Myeloid / Erythroid ratio is 5-1.
- D. Bone marrow forms more RBCs than leucocytes

8. All of the following are functions of red bone marrow except.....

- A. Formation of blood cells.
- B. Destruction of old RBCs by the macrophages.
- C. Storage of iron in the macrophages.
- D. Synthesis of clotting factors

9. Yellow bone marrow is changed into active red marrow in case of.....

- A. Hemorrhage
- B. Infection
- C. Heart failure
- D. Bone marrow failure

10. Hematopoiesis is the development of.....

- A. Liver cells
- B. Blood cells
- C. Kidney cells
- D. Brain cells

6. A

7. C

8. D

9. A

10. B

**11. Megakaryocytes are the origin of?**

- A. RBCs
- B. Monocytes
- C. Thrombocytes
- D. T lymphocytes

12. Specific granules begin to appear in cytoplasm of leucocytes in which step.....

- A. Myelocytes
- B. Promyelocytes
- C. Metamyelocytes
- D. Mature granulocytes

13. Polychromatic erythroblast is mainly characterized by

- A. Acidophilic cytoplasm
- B. Both acidophilic and basophilic cytoplasm
- C. Nucleus is lost
- D. Largest cell in erythropoiesis

14. Nucleus is extruded in erythropoiesis in

- A. Reticulocytes
- B. UMCs
- C. Polychromatic erythroblast
- D. Normoblasts.

15. In adults, yellow bone marrow may be found in

- A. The sternum
- B. The vertebra
- C. The tibia
- D. Clavicle

11.C

12.A

13.B

14.D

15.C

**16. Proerythroblasts?**

- A. Branched, stellate shaped cells
- B. Contain rounded, pale nucleus that has 2 nucleoli.
- C. Their cytoplasm is acidophilic
- D. May appear in blood.

17. Regarding reticulocytes all of the following is correct except

- A. They are slightly larger than RBCs
- B. They contain remnants of polyribosomes in the form of reticulum in the center of the cell
- C. They contain small dark nucleus
- D. They may appear in blood

18. All of the following cells contain basophilic cytoplasm except.....

- A. UMCs
- B. Proerythroblasts
- C. Basophilic erythroblasts
- D. Normoblasts

19.are thymus dependent cells

- A. Monocytes
- B. B-lymphocytes
- C. T-lymphocytes
- D. Neutrophils

20. Azurophilic granules begin to appear in cytoplasm of leucocytes in which step

- A. Myeloblasts
- B. Promyelocytes
- C. Myelocytes
- D. Metamyelocytes

21.cells migrate to the thymus gland during development of T-lymphocytes?

- A. UMCs
- B. CFU
- C. T-lymphoblasts
- D. Monoblasts

16. B

17. C

18. D

19. C

20. B

21. B

**1. Structural and functional unit of the lymphoid tissue.....:**

- A. Lymphatic nodule
- B. Lymph node.
- C. Spleen
- D. Thymus gland

2. Regarding lymphatic follicle which of the following is correct.....

- A. It is surrounded by capsule.
- B. It is a basophilic mass of lymphoid tissue
- C. Primary follicles contain a germinal center
- D. It is always solitary

3. Main cells of lymphatic nodules are.....

- A. Macrophages
- B. T lymphocytes.
- C. B lymphocytes
- D. Dendritic reticular cells

4. Which of the following is devoid of non- capsulated lymphoid follicle.....

- A. Lymph node
- B. Spleen.
- C. Tonsils.
- D. Thymus gland.

5. The palatine tonsils are covered by

- A. Stratified squamous keratinized epithelium.
- B. Stratified squamous non keratinized epithelium.
- C. Pseudo-stratified columnar ciliated epithelium.
- D. Simple columnar ciliated epithelium

1. A

2. B

3. C

4. D

5. B

**6. The pharyngeal tonsils are covered by:**

- A. Stratified squamous epithelium keratinized.
- B. Stratified squamous epithelium non keratinized.
- C. Pseudo- stratified columnar ciliated epithelium.
- D. Simple columnar ciliated epithelium

7. The parenchyma of spleen is formed of

- A. Cortex and medulla
- B. Red and white pulps
- C. Reticular networks
- D. All of the above

8. Malpighian corpuscles are found in

- A. Palatine tonsil
- B. Pharyngeal tonsil
- C. Thymus
- D. Spleen

9. The only lymphoid organ involved in filtration of blood is.....

- A. Pharyngeal tonsil
- B. Thymus
- C. Spleen
- D. Lymph nodes

10. The main site of destruction of old erythrocytes is

- A. Palatine tonsil
- B. Thymus
- C. Spleen
- D. Lymph nodes

6. C

7. B

8. D

9. C

10.C

**11. Adenoids are**

- A. Palatine tonsils.
- B. Pharyngeal tonsils.
- C. Lingual tonsils
- D. Thymus

12. Regarding thymus gland all of the following is correct except.....

- A. It is a flattened bilobed organ lying behind the sternum
- B. At puberty it involutes and decreases in size
- C. It has a thin loose C.T capsule
- D. Cortex is the central pale part of the thymus lobule

13. Hassall's corpuscles are present in

- A. Lymph node
- B. Spleen.
- C. Thymus gland
- D. Tonsils

14. Regarding lymph nodes which of the following is correct

- A. It is penetrated by afferent lymphatics
- B. It is surrounded by dense C. T capsule
- C. Trabeculae arise from the deep surface of the capsule
- D. All of the above

15. All of the following is correct regarding lymph nodes except

- A. Medulla is formed of lymphatic follicles
- B. Trabeculae are regular in the cortex and divide it into cortical compartment
- C. They are responsible for filtration of lymph by the macrophages of lymph sinuses
- D. Lymph sinuses are lined with endothelium without basement membrane

11.B

12.D

13.C

14.D

15.A

**16. Which of the following is covered by peritoneum?**

- A. Lymph node
- B. Spleen.
- C. Thymus gland
- D. Tonsils

17. Which of the following doesn't contain network of reticular fibers

- A. Lymph node
- B. Spleen.
- C. Thymus gland
- D. All of the above

18. Regarding spleen which of the following is correct.....

- A. It has a thick fibrous C. T. containing smooth muscle fibers
- B. Trabeculae arise from the deep surface of the capsule
- C. Red pulp is formed of lymphatic follicle with central artery
- D. It is divided into complete non-communicating splenic lobules

19. Spleen is responsible for all of the following except

- A. Humoral and cell mediated immunity
- B. Destruction of old R.B.Cs.
- C. Storage of blood
- D. Filtration of lymph

20. Blood sinusoids of spleen are surrounded byresponsible for filtration of blood

- A. Kupffer cells
- B. Histiocytes
- C. Littoral cells
- D. Langerhans cells

16. B

17. C

18. A

19. D

20. C

**21. Regarding white pulp of spleen which of the following is correct**

- A. It is formed of splenic cords
- B. It is formed of lymphatic follicles with central artery
- C. Central artery of white pulp is central in position
- D. It is localized in the cortex

22.are masses of lymphatic tissue present in the lamina propria of a mucous membrane

- A. Lymph node
- B. Spleen.
- C. Thymus gland
- D. Tonsils

23. Small collections of lymphatic tissue in the C. T. at the root of tongue.....

- A. Palatine tonsils
- B. Pharyngeal tonsils
- C. Lingual tonsils
- D. None of the above

24. Regarding palatine tonsils which of the following is correct

- A. They are a single mass of lymphatic tissue present in nasopharynx.
- B. They are surrounded by a capsule which separates them from muscular wall of pharynx
- C. They are covered by pseudo-stratified columnar ciliated epithelium which forms folds
- D. All of the above

25. Salivary corpuscles are.....

- A. Lymphocytes
- B. Reticular epithelial cells
- C. Macrophages
- D. Dendritic reticular cells

21. B

22. D

23. C

24. B

25. A

**26. Pharyngeal tonsils are present in**

- A. Nasopharynx
- B. Oropharynx
- C. Hypopharynx
- D. The root of the tongue

27.are responsible for secretion of thymic hormones?

- A. T- lymphocytes
- B. Reticular epithelial cells
- C. Hassall's corpuscles
- D. Macrophages

28. Regarding Hassall's corpuscles which of the following is correct.....

- A. It is a central hyaline basophilic mass
- B. It is present in the cortex of thymic lobules
- C. The mass is surrounded by concentric layers of reticular epithelial cells
- D. It is formed of mature T lymphocytes

29. Thymus barrier is present in

- A. Cortex of thymus lobule
- B. Medulla of thymus lobule
- C. Thymus capsule
- D. Thymus trabeculae

30. Thymus barrier is formed of all of the following except.....

- A. Capillary endothelium.
- B. Basement membrane
- C. Macrophages
- D. Lymphoblasts
- E. Reticular epithelial cells

26.A

27.B

28.C

29.A

30.D

