Level (1)
Sem (2)

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L.E

MCQ PHYSIOLOGY HIS

LECTURE (1)

Dr. M.M

Written Physio HIS 1

1. Enumerate function of RBCs and HB?
2. Enumerate adavantages of biconcave shape of RBCs ?
3. Mention normal and abnormal types of HB ?
4. As regard erythropiotin: source , nature , function , factor affecting?
5. Role of liver in erythropoisis?
6. Enumerate minerals and hormones needed for erythropoisis?
7. Mention function and Effect of deficiency of vit b12 on blood cells ?
8. Discuss mechanism of absorption of vit B12 ?

MCQ Physio HIS 1

1. The major function of RBCs is: a) Carriage of oxygen from the lungs to the tissues. b) Transport of Co2. c) Haemoglobin is an excellent acid base buffer. d) Increasing blood viscosity and peripheral resistance. e) Storage of iron.	A
2. All the following substances are essential for the normal development of RBCs, except: a) Folic acid. b) Ascorbic acid. c) Nicotinic acid. d) Vitamin B12. e) Iron	C

3. What is the normal HB level in infant: a) 10-11 gm/dl b) 12-16 gm/dl c) 14-18 gm/dl d) 18 gm/dl e) 25 gm/dl	**D**
4. The biconcave shape of erythrocytes has the following advantage: a) Produces a small surface area than a spherical cell of the same volume. b) Allows erythrocytes to be squeezed through small capillaries without rupture. c) Results in high tension on the membrane when the volume of the cell changes. d) Allows a small surface area for gas exchange. e) It allows free diffusion of ions.	**B**
5. About the structure of erythrocytes the followings is false: a) Are surrounded with plastic semipermeable membrane. b) Haemoglobin is the main constituent of the erythrocytes. c) K is the chief intracellular cation. d) It is a nucleated biconcave disc. e) It has no mitochondria.	**D**
6. About sites of erythropoiesis: a) In the 1st trimester of gestation the nucleated RBCs are produced in liver. b) In the 2nd trimester of gestation RBCs are produced in the yolk sac. c) In the last trimester and after birth, the erythropoiesis is restricted to the membranous bones. d) By the age of 20 years , bone marrow of most long bones becomes fatty. e) After age of 20 years, Erythropoiesis is restricted to yellow bone marrow.	**D**

7. About the stages of erythropoiesis; which of the following is False: a) Interleukins are important for the formation of commited stem cells from PHSCs. b) Erythropoietin is responsible for maturation of erythroblasts to mature RBCs. c) Vit.B12 and folic acid are responsible for differentiation of erythroblasts to normoblast. d) Erythropoietin stimulates the production of proerythroblasts from hemopoietic stem cells in the bone marrow. e) Erythropoietin speed up all the stages of development in erythroblasts.	**B**
8. Healthy liver is essential for normal RBCs formation because it is the site of: a) Formation of 90% of erythropoietin. b) Formation of the heme part of hemoglobin. c) Destruction of old RBCs. d) Synthesis of cobalt and androgen. e) Storage of iron and vitamin B12.	**E**
9. Main site of erythropoiesis in middle age? a) red bone marrow b) amniotic cavity c) yolk sac d) lymph node e) lung	**A**
10. About the red blood corpuscles one of these is false: a) It the most abundant of all blood cells. b) It has no nucleus. c) It has a diameter of 7.8 um and a volume of 90 to 95 u3. d) Its count is low in newly born infants and more in growing children. e) Persons living at high altitudes have greater number of RBC.	**D**

11. Mechanism of blood elements production is called: a) Hemopoiesis. b) Hemostasis. c) Homeostasis. d) Erythropoiesis. e) Leukopoiesis.	**A**
12. Erythropiosis is: a) Formation of RBCs b) Formation of WBCs c) Formation of platelets. d) All the above are correct.	**A**
13. Concerning the RBC: a) It has a diameter of about 3.5 µm. b) It has a biconcave shape. c) It produced by the liver and spleen only. d) Its normal number is 5 – 6 X 106 / cm. e) Its life spans is 120 months.	**B**
14. Concerning RBCs which of the following is not true: a) They do not have a nucleus. b) Their normal count is about 5 millions / mm3. c) They are about 45% of the total blood volume. d) They contain over 80 grams of Hb per 100 ml of blood.	**D**
15. Which of the following statements about RBCs is correct: a) Have antibodies on their membrane surface. b) Their count in women is 10 million / cubic mm. c) Their life span is 6 months. d) Have antigen on their membrane surface.	**D**

16. Which of the following is NOT true concerning RBCs: a) They are biconcave non nucleated cells. b) RBC count is about 4.5 million / Cmm in normal female. c) They form the vast majority of blood cells. d) They contain over 30 pg of hemoglobin / 100 ml of blood. e) None of the above is true.	**D**
17. Erythropoietin hormone: a) Is secreted mainly by the liver. b) Is secreted mainly by the pancreas. c) Stimulates RBCs formation. d) Stimulates WBCs formation. e) Leads to sever anemia.	**C**
18. Which of the following is the main stimulus for erythropoiesis: a) Thyroid hormones. b) Hypoxia. c) High protein diet. d) Growth hormone. e) Both a & d are correct.	**B**
19. Iron is transported in the blood as: a) Free iron. b) Ferritin. c) Transferrin. d) Apotransferrin.	**C**
20. The main cause of megaloblastic anemia is: a) Iron deficiency. b) Destruction of bone marrow. c) Acute blood loss. d) RBCs Hemolysis. E) Vit B 12 deficiency.	**E**

1. The intrinsic factor (IF) is important for: a) Absorption of vitamin K. b) Absorption of vitamin B12 at the terminal ileum. c) Absorption of iron. d) Blood coagulation. e) Both a & b are correct.	**B**
22. Site of vit B12 absorption : a) stomach b) terminal ileum. c) colon d) sweat gland	**B**
23. In adult person, the blood cell hemolysis occurs in: a) Liver. b) Spleen. c) Bone. d) None of the above is correct.	**B**
24. Life span of RBCs is : a) 30 day b) 120 day c) 150 day d) None of the above is correct.	**B**
25. The high number of red blood cells in newly born infant is due to: A- Menstruation. B- Androgen hormone. C- Estrogen hormone. D- Intra-uterine oxygen lacks.	**D**

26. Aging red blood cells are fragmented and trapped in the: a) intestines b) liver c) spleen. d) kidneys	C
27. What is the primary function of red blood cells (RBCs) in the human body? a) Blood clotting b) Oxygen transport c) Immune response d) Nutrient absorption	B
28. Erythrocytes: a. contain no enzymes. b. are responsible for blood viscosity. c. have life span about 2 months. d. hemoglobin can't help in CO2 carriage. e. have large amount of mitochondria.	B
29. Erythropiesis in fetus takes place: A) Bone marrow of all bones B) bone marrow of long bone C) liver and spleen D) bone marrow of membranous bones	C
30. RBCs concentration of cells in the male's body: A) 4.6 million/mm3 B) 5.5 million/mm3 C) 5.2 million /mm3 D) 4.8 million /mm3	C

31. Which organ stores B12 & iron: A) Kidney B) pancreas C) liver D) small intestine	**C**
32. What RBC enzyme facilitates transport of carbon dioxide (CO_2)? A) Myeloperoxidase B) Carbonic anhydrase C) Superoxide dismutase D) Globin reductase	**B**
33. During the second trimester of pregnancy, where is the predominant site of RBC production? A) Yolk sac B) Bone marrow C) Lymph nodes D) Liver	**D**
34. The intrinsic factor: a) Is found in the liver. b) Is produced by the gastric parietal cells. c) Is secreted by the terminal ileum. d) Aids absorption of folic acid.	**B**
35. How many polypeptide chains present inside globin? a. Two. b. Three. c. Four. d. Five. e. Six.	**C**

36. Stomach plays important role in erythropoiesis because it: A. Helps absorption of folic acid. B. Helps absorption of B12 and iron. C. Secretes erythropoietin. D. Forms globin part of hemoglobin.	**B**
37. Vitamin B12: A. Deficiency produces bleeding tendency. B. Needs gastric HCl for its absorption. C. Is absorbed from the upper part of the small intestine. D. Is needed for nuclear maturation and cell division.	**D**
38. Regarding the number of red blood cells (RBCs), which of the following sentences is correct? a. Its number increases in anemia or oligocythemia b. Polycythemia means decrease in their number. c. Normal count in males 5-5.5 million /mm. d. Normal count in females 6-6.5 million /mm. e. It increases in hemorrhage	**C**
39. The fetal hemoglobin (Hb F) structure consists of 4 polypeptide chains: a. 2 alpha and 2 beta polypeptide chains. b. 2 alpha and 2 delta polypeptide chains. c. 2 alpha and 2 gamma polypeptide chains. d. 2 alpha and 2 theta polypeptide chains. e. 2 alpha and 2 kabba polypeptide chains.	**C**
40. In adult male, the average hemoglobin is: A.12 gm % b) 14 gm % C.16 gm % d) 18 gm %	**C**

41. Megaloblastic anemia can be caused by: a. Folic acid deficiency. b. Iron deficiency. c. Chronic renal failure. d. Living at high altitude. e. Glucose 6 phosphate dehydrogenase deficiency.	A
42. Persons living in high altitudes have greater number of: A. RBCs. B. WBCs. C. Platelets. D. Plasma proteins.	A
43. What is the purpose of the biconcave shape of red blood cells? a) Facilitate oxygen binding b) Increase surface area for nutrient absorption c) Enhance flexibility for navigating narrow capillaries d) Aid in blood clotting	C
44. One of the following is needed for maturation of RBCs: A. Vitamin C and B6 B. Zink and cobalt C. Vitamin B12 and folic acid D. Vitamin D and E.	C
45. Blood viscosity is maintained by: A. RBCS B. WBCS C. Platelets. D. Monocytes.	A

46. In adults, erythropoietin is mainly formed by: A. Liver. B. Spleen C. Bone marrow. D. Kidney.	**D**
47. Which hormone regulates the production of red blood cells in the bone marrow? a) Insulin b) Estrogen c) Testosterone d) Erythropoietin	**D**
48. Erythropoietin hormone is stimulated by: A. Increased oxygen demand as athletes. B. Increased CO2 production. C. Iron intake. D. Vitamin B12 and folic acid intake.	**A**
49. Which blood component is responsible for carrying carbon dioxide back to the lungs for exhalation? a) Red blood cells b) White blood cells c) Platelets d) Plasma	**A**
50. Deficiency of vitamin B12 and folic acid leads to: A. Aplastic anemia. B. Megaloplastic anemia. C. Haemolytic anemia. D. Blood loss anemia.	**B**

. Erythropoiesis means: *A. Decreased number of RBCs.* *B. Formation of new RBCs.* *C. Abnormal increase in RBCs number.* *D. Formation of new monocytes.*	**B**
52. The protein responsible for iron transport in plasma is: *a. α1-antitrypsin* *b. Ferritin* *c. Apo-transferrin* *d. Apo-ferritin* *e. Ceruloplasmin*	**C**
53. By the age of 7 months, the primary site of haematopoiesis in a fetus is: *a. Thymus* *b. Liver* *c. Spleen* *d. Reticuloendothelial system* *e. Red marrow*	**E**
54. The most abundant cells of the blood are: *a. Platelets* *b. Erythrocytes* *c. Granulocytes* *d. Leukocytes* *e. Reticuloendothelial cells*	**B**
55. Beta Thalassemia is associated with: *a) An increase in alpha chain synthesis of hemoglobin molecule.* *b) A decrease in beta chain synthesis.* *c) An increase in beta chain synthesis.* *d) An increase in alpha and beta chain synthesis.* *e) More fetal hemoglobin.*	**B**

56. Erythropoietin: a) May decrease the life span of RBCs. b) is not released on breakdown of RBCs. c) May stimulate the stem cells. d) Is formed mainly in liver. e) Is lipid in nature.	**C**
57. Regarding Erythropoietin & erythropoiesis: a. It is formed mainly in liver & partly in kidneys b. Hypoxia can stimulate erythropoiesis in the absence of erythropoietin c. Relief from hypoxia inhibits erythropoietin induced erythropoiesis d. Erythropoietin mainly stimulates production of hematopoietic stem cells e. Erythropoietin is over stimulated in patients with renal disease	**C**
58. Erythrocytes: A. Synthesize and release erythropoietin. B. Have a higher concentration of potassium than is in plasma. C. Have an abundant supply of mitochondria. D. Have a multilobed nucleus.	**B**
59. Vitamin B12: A. Deficiency produces normocytic anemia. B. Needs gastric HCl for its absorption. C. Is absorbed from the upper part of the small intestine. D. Is needed for nuclear maturation and cell division.	**D**
60. Long term hypoxia may serve as a growth inducer of the following blood cells: a. Basophils b. Monocytes c. Macrophages d. Red blood cells e. Platelets	**D**

. RBCs: A. Have a central nucleus. B. Have a phagocytic function. C. Its wall is flexible plastic. D. Contain myoglobin protein.	C
62. The synthesis and release of erythropoietin is increased in a person who goes to live at high altitude because: A. Cardiac output is increased. B. Hematocrit is increased. C. Partial pressure of oxygen is less. D. Alveolar ventilation rate is increased.	C
63. A 36-old man with end stage kidney disease has anemia (deficiency of RBCs). Which of the following is the most appropriate therapy? A. Erythropoietin. B. Iron. C. Folic acid. D. Vitamin B12.	A
64. Red blood corpuscles are: A. Biconcave flexible round corpuscles. B. Life span 7-11 days C. Is produced by bone marrow in fetus. D. Responsible for homeostasis.	A
65. Erythropoiesis: A. Occurs in the liver during the first 5 years of life. B. Above 20 occurs in the bone marrow of all bones. C. Is affected by vitamin K deficiency. D. Is stimulated at high altitude.	D