قائمة الاسئلة

خضاب الدم-مختبرات -الثالث- درجة الاختبار(60)

أ.د.محمد النزيلي

1) If iron in hemoglobin is oxidized to 3+, what disease may occur ?
   1) - Sickle cell anemia
   2) - Cystic fibrosis
   3) + Methemoglobinemia
   4) - Carbon monoxide poisoning
2) Hemoglobin molecule is composed of:
   1) - Two globin chains and two heme molecules
   2) + Four globin chains and four heme molecules
   3) - Four globin chains and ferrous iron
   4) - Two globin chains and ferric iron
3) A point mutation in the beta-globin gene changing the codon number 6 from glutamate to valine will likely cause what disease?
   1) - Methemoglobinemia
   2) - Carbon monoxide poisoning
   3) + Sickle cell anemia
   4) - Thalassemia
4) All of the followings are true about iron metabolism EXCEPT :
   1) - Iron is constituent of Hb, Mb, heme enzymes and transferrin
   2) - Iron is transported from blood to tissues by transferrin
   3) - Iron is stored in macrophages as ferritin and hemosiderin
   4) + Iron is regulated by erythropoiietin
5) What has the highest affinity for oxygen ?
   1) - Hemoglobin F
   2) - Hemoglobin A
   3) + Myoglobin
   4) - Hemoglobin A2
6) The most common anemia in the world is:
   1) + Iron deficiency anemia
   2) - Megaloblastic anemia
   3) - Sideroblastic anemia
   4) - Sickle cell anemia
7) ATP is generated in RBC by:
   1) - Methemoglobin reductase shunt
   2) - Hexose-monophosphate pathway
   3) + Embden-Meyerhof pathway
   4) - Lubering-Rapaport shunt
8) The function of the methemoglobin reductase shunt is to:
   1) - provide cellular energy
   2) - produce methemoglobinemia
   3) + prevent oxidation of heme iron
   4) - control the rate of glycolysis
9) Glucose 6-phosphate dehydrogenase (G6PD) deficiency is characterized by:
   1) - it is the most common genetic disease in human (X-linked disease)
   2) - It causes a hemolytic anemia associated with Heinz bodies
   3) - It induced by some drugs, ingestion of fava beans or by heavy infection

4) + All Answers are Correct

10) Extravascular hemolysis is characterized by:
1) - Occurs in macrophages of RES of liver, spleen and BM
2) - The most common mechanism in normal RBC destruction
3) - Initiate by signals to macrophages to ingest damaged or senescent RBC
4) + All Answers are Correct

11) What is the Hb that results when glutamate in the 6th position of beta chain is replaced by lysine ?
1) - Hb S
2) + Hb C
3) - Hb E
4) - Hb Yakima

12) All of the followings are true about vitamin B12 metabolism EXCEPT :-
1) - The daily dietary intake is 5-30µg, daily needs is 5 µg.
2) - It presents in foods of animal origin e.g. liver, meat, eggs and milk
3) + The total body stores 2-3mg sufficient for 2-5 months.
4) - Presents in two coenzyme forms as methyl B12 and adoB12

13) All of the followings are true about folate metabolism EXCEPT :
1) - The absorption takes place in duodenum and jejunum
2) - It is absorbed as methyl THF
3) - It is transported in blood weakly bound to albumin
4) + None of the above

14) Hb Bart's consists of:
1) - Four β globin chains
2) + Four γ globin chains
3) - Four α globin chains
4) - Four delta globin chains

15) Hb H consists of:
1) + Four β globin chains
2) - Four γ globin chains
3) - Four α globin chains
4) - Four delta globin chains

16) The activity of hexose-monophosphate pathway increases the RBC source of :
1) - Glucose and lactic acid
2) - 2,3-DPG and methemoglobin
3) + NADPH and reduced glutathione
4) - ATP and other purine metabolites

17) All of the followings are true about vitamin B12 metabolism EXCEPT :
1) - The absorption takes place in Ileum
2) - Intrinsic factor (IF) is important for B12 absorption
3) - It is transported by 3 types of Transcobalamins (TCI, II, III)
4) + None of the above

18) All of the followings are true about folic acid metabolism EXCEPT :
1) - The daily dietary intake is 200-250µg, daily needs 100-150 µg.
2) - It presents in most foods especially liver, meat, green vegetables and fruits
3) + Total body stores 10-12 mg sufficient for 2-4 years.
4) - It is Important for DNA synthesis

19) In α-thalassemia, deletion of three α-genes produces:
1) - Hb S
2) + Hb H

3) - Hb D
4) - Hb M

20) A qualitative abnormality in Hb may involve all of the followings EXCEPT:
1) - Replacement of one or more amino acids in a globin chain
2) - Addition of one or more amino acids in a globin chain
3) - Deletion of one or more amino acids in a globin chain
4) + Decreased production of a globin chain

21) If a defect in the oxidative pathway occurs, what will result?
1) - Insufficient amounts of reduced glutathione
2) - Denaturation of globin
3) - Precipitation of Heinz bodies
4) + All Answers are Correct

22) Patients with SCD usually do not exhibit symptoms until 6 months of age because:
1) - The mother's blood has a protective effect
2) - Hemoglobin levels are higher in infants at birth
3) + Higher levels of Hb F are present
4) - The immune system is not fully developed

23) Through routine screening, prospective parents discover that they are both heterozygous for Hb S. What percentage of their children potentially could have SCD?
1) + 25%
2) - 50%
3) - 75%
4) - 100%

24) When binding with oxygen, what type of binding curve does hemoglobin have ?
1) - Linear
2) + Sigmoidal
3) - Hyperbolic
4) - All Answers are Correct

25) Which of the following statements describes the oxygen binding curve of haemoglobin ?
1) - Each of the four oxygens bind with equal facility
2) + The binding of the first oxygen molecule enhances the binding of the other three oxygen molecules
3) - The binding of the first oxygen molecule makes the binding of the other three oxygen molecules more difficult
4) - The binding of the first oxygen molecule has no effect on the binding of the remaining three oxygen molecules

26) The Embden-Meyerhof pathway net gain of ATP provides high energy phosphates to:
1) - maintain membrane lipids
2) - power the cation pump needed for Na+/K+ pump and calcium flux
3) - preserve the shape and flexibility of the cellular membrane
4) + All Answers are Correct

27) Thalassemia is caused by:
1) - Increase in α chain production
2) - Increase in β chain production
3) + Decrease in α or β chain production
4) - All Answers are Correct

28) Disorders of heme synthesis include the followings EXCEPT:
1) - Iron deficiency anemia
2) - Sideroblastic anemia
3) + Megaloblastic anemia

4) - Porphyria

29) All of the following factors favoring iron absorption EXCEPT:
1) - Ferrous form (Fe+2)
2) + Tea
3) - Reduced serum hepcidin
4) - Increased expression of DMT-1 in duodenal enterocytes

30) Iron overload is caused by:
1) - Excessive absorption of iron
2) - Excessive repeated blood transfusions
3) - Genetic mutation of the HFE gene causing C282Y protein change
4) + All Answers are Correct