Pathology — Polycythemia & Anemias (100 Short Questions with Answers)

1. What is polycythemia?
   Answer: An abnormal increase in red blood cell count.
2. What happens to blood viscosity in polycythemia?
   Answer: It increases, making circulation slower.
3. What are the two main types of polycythemia?
   Answer: Primary and secondary.
4. What causes primary polycythemia?
   Answer: Bone marrow disorder producing excess RBCs (polycythemia vera).
5. What causes secondary polycythemia?
   Answer: Increased erythropoietin due to low oxygen.
6. What are symptoms of polycythemia?
   Answer: Headache, dizziness, and high blood pressure.
7. What is the treatment for polycythemia vera?
   Answer: Phlebotomy and drugs reducing RBC production.
8. What is anemia of blood loss?
   Answer: Anemia caused by acute or chronic bleeding.
9. What causes acute blood loss anemia?
   Answer: Trauma or surgery.
10. What are symptoms of acute blood loss?
    Answer: Weakness, pallor, and rapid pulse.
11. What causes chronic blood loss anemia?
    Answer: Peptic ulcers or menstruation.
12. Why does chronic blood loss cause iron deficiency?
    Answer: Iron stores are gradually depleted.
13. What is anemia of low production?
    Answer: Bone marrow fails to make enough RBCs.
14. What causes low production anemia?
    Answer: Deficiency or marrow failure.
15. What deficiencies cause it?
    Answer: Iron, B12, folate deficiency.
16. What is aplastic anemia?
    Answer: Severe marrow failure to produce cells.
17. What is hemolytic anemia?
    Answer: Anemia due to premature RBC destruction.
18. What are two types of hemolytic anemia?
    Answer: Intrinsic and extrinsic.
19. What causes intrinsic hemolytic anemia?
    Answer: Hereditary RBC defects.
20. What causes extrinsic hemolytic anemia?

Answer: Autoimmune or toxin damage.

21. What lab finding shows hemolysis?
Answer: High bilirubin and reticulocytes.

22. What causes jaundice in hemolysis?
Answer: Excess breakdown of hemoglobin.

23. What are spherocytes?
Answer: Round RBCs seen in hereditary spherocytosis.

24. How to treat severe hemolysis?
Answer: Blood transfusion and treat cause.

25. What is reticulocytosis?
Answer: Increased immature RBCs in blood.

26. What is extravascular hemolysis?
Answer: RBC destruction by macrophages in spleen.

27. What is intravascular hemolysis?
Answer: RBC destruction inside vessels.

28. What lab test detects intravascular hemolysis?
Answer: Low haptoglobin and plasma hemoglobin.

29. What is a complication of chronic hemolysis?
Answer: Gallstones formation.

30. What is the compensatory response in hemolysis?
Answer: Increased erythropoietin.

31. What is thalassemia?
Answer: Inherited disorder with defective hemoglobin synthesis.

32. What is sickle cell anemia?
Answer: RBCs sickle under low oxygen due to gene mutation.

33. What are symptoms of sickle cell anemia?
Answer: Pain crises and organ damage.

34. What is anemia of chronic disease?
Answer: Low production anemia from inflammation.

35. How does inflammation cause anemia?
Answer: Increased hepcidin blocks iron use.

36. What happens to serum iron in chronic disease?
Answer: It decreases.

37. What is iron deficiency anemia type?
Answer: Microcytic hypochromic.

38. What is normal MCV range?
Answer: 80–100 fL.

39. What is low MCV called?
Answer: Microcytosis.

40. What is high MCV called?
Answer: Macrocytosis.

41. What are general anemia symptoms?
Answer: Fatigue, pallor, and shortness of breath.

42. What is pancytopenia?
Answer: Decrease in RBCs, WBCs, and platelets.

43. What is schistocyte?
Answer: Fragmented RBC from vessel damage.

44. What triggers G6PD hemolysis?
Answer: Drugs, infection, or fava beans.

45. What is autoimmune hemolytic anemia?
Answer: Antibodies destroy RBCs.

46. What is Coombs test for?
Answer: Detect antibodies on RBCs.

47. What causes malaria-induced hemolysis?
Answer: Plasmodium parasites destroy RBCs.

48. What is MAHA?
Answer: Microangiopathic hemolytic anemia with RBC fragmentation.

49. What is hemoglobinuria?
Answer: Hemoglobin in urine due to RBC destruction.

50. What is bilirubinuria?
Answer: Bilirubin in urine from hemolysis.

51. What happens to reticulocyte count in hemolysis?
Answer: It increases.

52. What happens to reticulocyte count in low production?
Answer: It decreases.

53. What is hypochromia?
Answer: Pale RBCs from low hemoglobin.

54. What is anisocytosis?
Answer: RBCs of unequal size.

55. What is poikilocytosis?
Answer: RBCs of abnormal shape.

56. What test diagnoses anemia?
Answer: Complete blood count (CBC).

57. What is MCHC?
Answer: Hemoglobin concentration in RBCs.

58. What is ferritin?
Answer: Iron storage protein.

59. What is TIBC?
Answer: Total iron binding capacity.

60. What happens to ferritin in chronic disease?
Answer: It increases.

61. What happens to ferritin in iron deficiency?
Answer: It decreases.

62. What happens to TIBC in iron deficiency?
Answer: It increases.

63. What is erythropoietin’s function?

Answer: Stimulates RBC production.

64. What organ makes erythropoietin?
Answer: Kidneys.

65. What is macrocytic anemia caused by?
Answer: Vitamin B12 or folate deficiency.

66. What is microcytic anemia caused by?
Answer: Iron deficiency or thalassemia.

67. What is normocytic anemia caused by?
Answer: Blood loss or chronic disease.

68. What test measures RBC size?
Answer: Mean corpuscular volume (MCV).

69. What test measures Hb in RBC?
Answer: Mean corpuscular hemoglobin (MCH).

70. What is anemia hallmark?
Answer: Low hemoglobin and hematocrit.

71. What is hypoxia?
Answer: Low oxygen in tissues.

72. What causes secondary polycythemia?
Answer: Chronic hypoxia or tumors.

73. What is myelophthisic anemia?
Answer: Marrow replaced by tumor or fibrosis.

74. What is hepcidin?
Answer: Liver hormone regulating iron absorption.

75. What increases hepcidin?
Answer: Inflammation or infection.

76. What is autoimmune cause of anemia?
Answer: Lupus or cold agglutinin disease.

77. What is hemoglobinopathy?
Answer: Genetic defect of hemoglobin.

78. What causes iron deficiency?
Answer: Chronic bleeding or poor intake.

79. What is hyperbilirubinemia?
Answer: Excess bilirubin in blood due to hemolysis.

80. What causes fatigue in anemia?
Answer: Low oxygen supply to tissues.

81. What is hemosiderinuria?
Answer: Iron pigment in urine due to hemolysis.

82. What is chronic blood loss source?
Answer: Gastrointestinal or uterine bleeding.

83. What causes megaloblastic anemia?
Answer: Deficiency of folate or vitamin B12.

84. What is macrocytosis effect?
Answer: Enlarged RBCs with impaired DNA synthesis.

85. What is the main goal of anemia treatment?
Answer: Restore oxygen delivery to tissues.

86. What is iron therapy used for?
Answer: Iron deficiency anemia correction.

87. What are signs of severe anemia?
Answer: Tachycardia, dizziness, and fainting.

88. What is homeostasis of RBCs?
Answer: Balance between production and destruction.

89. What is the main difference between primary and secondary polycythemia?
Answer: Primary is from bone marrow overproduction; secondary from high erythropoietin.

90. What complication can result from untreated polycythemia?
Answer: Thrombosis or stroke due to increased blood viscosity.

91. What is the main cause of iron deficiency in chronic blood loss anemia?
Answer: Continuous loss of small amounts of blood depleting iron stores.

92. What happens to bone marrow activity after acute blood loss?
Answer: It becomes hyperactive to replace lost red cells.

93. What is the lifespan of RBCs in hemolytic anemia compared to normal?
Answer: Shortened to less than 120 days.

94. What distinguishes anemia of low production from hemolytic anemia?
Answer: Low production anemia has decreased formation, hemolytic has increased destruction.

Done by Nour Aldulaimi