

115/2022

Maximum : 100 marks

Time : 1 hour and 30 minutes

1. Gauge size of needle used for blood donation :
(A) 14 G (B) 10 G
(C) 21 G (D) 16 G
2. Disease not transmitted by blood transfusion is :
(A) Hepatitis B (B) Hepatitis C
(C) Hepatitis A (D) Hepatitis D
3. Platelet concentrate is prepared by :
(A) Heavy spin followed by light spin (B) Light spin followed by heavy spin
(C) Light spin only (D) Heavy spin only
4. Plasmapheresis is done for the following clinical condition :
(A) Multiple myeloma (B) Allergic condition
(C) Hypokalemia (D) None of the above
5. Blood can be stored upto how much days with CPDA solution :
(A) 28 (B) 35
(C) 48 (D) 42
6. Most suitable diluent for preparing a solution of 8% Bovine albumin :
(A) Distilled water (B) Deionised water
(C) Normal saline (D) None of the above
7. The storage temperature for Fresh Frozen Plasma is :
(A) 4°C (B) -50°C
(C) 37°C (D) -20°C
8. Minimum weight for a blood donor is :
(A) 110 lbs (B) 100 lbs
(C) 85 lbs (D) 95 lbs
9. Cryoprecipitate is used for the treatment of :
(A) Iron deficiency anaemia (B) Haemophilia A
(C) Sickle cell anaemia (D) Haemophilia B

10. Blood collection is permanently deferred in :
- (A) Residence in an endemic malaria region
 - (B) Diabetes
 - (C) History of jaundice of uncertain cause
 - (D) History of therapeutic rabies vaccine
11. The venipuncture site must be cleaned with a scrub solution containing :
- (A) 10% Acetone
 - (B) Hypochlorite
 - (C) Isopropyl alcohol
 - (D) Povidone iodine
12. All donor blood testing must include :
- (A) Direct Coomb's test
 - (B) Serological test for syphilis
 - (C) Complex Rh phenotyping
 - (D) Anti CMV testing
13. An important determinant of platelet viability following storage is :
- (A) Plasma pH
 - (B) Prothrombin time
 - (C) Plasma potassium level
 - (D) Activated partial thromboplastin time
14. The concentration of 2,3 - di phospho glycerate is decreased during storage in a unit of :
- (A) Fresh Frozen Plasma
 - (B) Platelet Rich Plasma
 - (C) Cryoprecipitate
 - (D) Red blood cells
15. An Individual with D negative blood group have one of the following on their RBC membrane :
- (A) Antigen RhD
 - (B) Antigen RhCE
 - (C) Both RhD and RhCE
 - (D) None of the above
16. The enzyme involved in conversion of H substance into A and B antigens :
- (A) Aryl sulfatase
 - (B) Hexosaminidase
 - (C) Glycosyl transferase
 - (D) None of the above
17. hh genotype (oh phenotype) refers to blood group :
- (A) Kell
 - (B) Duffy
 - (C) Bombay
 - (D) A

18. The anti A and anti B immune antibodies are mostly :
- (A) IgG (B) IgM
(C) IgA (D) IgD
19. Immunodominant sugar of H antigens :
- (A) D – galactose (B) L – fructose
(C) L – fucose (D) None of the above
20. The blood group system based on cold reacting antibodies :
- (A) Duffy system (B) Kell system
(C) MNS system (D) Rh system
21. The antibody in the Lutheran system that is best detected at lower temperature is :
- (A) anti-Lu^{ab} (B) anti-Lu^b
(C) anti-Lu³ (D) anti-Lu^a
22. Which of the following red cell antigens are found on glycoprotein A?
- (A) M, N (B) Le^a, Le^b
(C) S,s (D) None of the above
23. The Kell antigen is :
- (A) absent on red cells of neonates (B) destroyed by enzymes
(C) strongly immunogenic (D) all of the above
24. The antibodies of the Kidd blood group system :
- (A) can cause allergic transfusion reactions
(B) react best by the Indirect Coomb's Test
(C) are predominantly IgM
(D) all of the above
25. Which of the following blood group is compatible for A negative blood group?
- (A) A positive (B) O positive
(C) B positive (D) O negative
26. Most blood group systems are inherited as :
- (A) Autosomal co dominant (B) Sex linked dominant
(C) Sex linked recessive (D) Autosomal recessive

27. Both parents are group AB. Which of the following are possible in offspring :
- (A) AB (B) A
(C) B (D) All of the above
28. Colour of antiserum AB is :
- (A) Blue (B) Pink
(C) Green (D) Colourless
29. Blood cells are produced mainly from :
- (A) Heart (B) Lungs
(C) Veins (D) Bone marrow
30. Which of the following is not true about citrate as an anticoagulant?
- (A) It is used in preservative solution in blood bags
(B) Used to collect blood for coagulations studies
(C) It prevent clotting by inhibiting thrombin
(D) All the above
31. Phlebotomy means :
- (A) Disposal of unused specimen
(B) Collection of blood
(C) Separation of blood from serum
(D) Instrument used to ensure QC in lab
32. Delay in releasing tourniquet during venipuncture causing :
- (A) Escape of fluid and haemo concentration
(B) Haemo dilution
(C) Both (A) and (B)
(D) Haemo concentration
33. Blood group antigens of ABO system are made up of mainly :
- (A) Fatty acids (B) Proteins
(C) Pyrimidins (D) Purins
34. Blood group having both anti A and anti B in their sera :
- (A) A group (B) B group
(C) O group (D) AB group

35. Which is not correct about H antigen?
- (A) Present in all ABO group individuals
 - (B) If not present H antibody will be there in plasma
 - (C) Besides in blood cells it is present in tissues also
 - (D) H antigen present in Bombay group individuals
36. Hybridoma technique is used :
- (A) To produce monoclonal antibodies
 - (B) To screen blood donors
 - (C) To store blood
 - (D) To separate blood components
37. Coombs test is otherwise known as :
- (A) Compatibility test
 - (B) Anti Human Globulin test
 - (C) Tissue typing test
 - (D) Donor confidence test
38. In Indirect Coombs test ,sensitivity can be increased by the addition of :
- (A) Enzymes
 - (B) Albumin
 - (C) LISS
 - (D) All the above
39. In Indirect Coombs test, sensitivity can be increased by the addition of :
- (A) Enzymes
 - (B) Albumin
 - (C) LISS
 - (D) All the above
40. Which type of cells are used as reagent cells in Coombs test :
- (A) AB group cells
 - (B) Rh positive O group cells
 - (C) B group cells
 - (D) Rh negative O group cells
41. False negative results in AHG test may occur due to :
- (A) Prozone affect
 - (B) Inadequate incubation
 - (C) Inadequate washing
 - (D) All the above
42. False positive results in coombs test may resulted from :
- (A) Over centrifugation
 - (B) Cold antibody in sample
 - (C) Dirty glass wares
 - (D) All the above
43. During antibody detection cells that acts as auto control are :
- (A) Patients serum
 - (B) Patient own cells
 - (C) Pooled cells from donor
 - (D) Bombay group cells

44. Antibodies that are set to be 'complete, cold and bigger in size' are :
- (A) IgM (B) IgG
(C) IgE (D) IgA
45. During preservation of reagent red cells, cryoprotective agent is :
- (A) Sucrose (B) Glycerol
(C) Both (A) and (B) (D) None of these
46. Characteristics of IgG antibody include :
- (A) Detected by enzyme test (B) They are warm antibodies
(C) Detected by ICT (D) All the above
47. Technical errors that leads to transfusion reactions except :
- (A) Errors in blood grouping
(B) Errors in antibody detection
(C) Failure to observe compatibility results
(D) Donors unwillingness to donate blood
48. Majority of transfusion reactions are of type :
- (A) AHTR (B) FNHTR
(C) GVH (D) Circulatory overload
49. Patients who receive repeated transfusions may develop :
- (A) Haemosiderosis
(B) Haemolytic reactions
(C) Non-haemolytic reactions
(D) Anaphylactic transfusion reaction
50. Non-haemolytic transfusion reaction include :
- (A) Pink plasma (B) No increase in bilirubin
(C) No haemoglobinuria (D) (B) and (C) are correct
51. Result of a compatibility test is observed as :
- (A) Agglutination (B) Haemolysis
(C) Increase in temperature (D) Either agglutination or haemolysis
52. Intravascular transfusion reactions are due to :
- (A) IgG (B) IgM and complement
(C) Phagocytosis (D) None of the above

53. AHTR means :
- (A) Arterial Hemolytic Transfusion Reaction
 - (B) Acute Hemolytic Transfusion Reaction
 - (C) Acute Hemolytic Treatment Response
 - (D) Adult Hemolytic Transfusion Reaction
54. Colour of AHG reagent is :
- (A) Blue
 - (B) Colourless
 - (C) Pink
 - (D) Green
55. For DAT patient cell suspension is prepared as :
- (A) 2-4%
 - (B) 0.5-1%
 - (C) 10-20%
 - (D) None of the above
56. LISS is a type of :
- (A) Incubator
 - (B) Saline solution
 - (C) Component separator
 - (D) Cleaning solution
57. A serological marker of HBV infection indicating active viral replication or high infectivity :
- (A) HBsAg
 - (B) HBeAg
 - (C) HBcAg
 - (D) None of the above
58. Which statement is true regarding P. Vivax :
- (A) Shows cytoadherence
 - (B) Maurer's dots are seen
 - (C) Dormant hepatic stages called hypnozoites can cause relapse
 - (D) Cycle of Schizogony is completed in 72 hrs.
59. T. Pallidum may be demonstrated by:
- (A) Fontana's method
 - (B) India Ink method
 - (C) Dark ground microscopy
 - (D) All of the above
60. HCV belongs to the family :
- (A) Flaviviridae
 - (B) Picornaviridae
 - (C) Arenaviridae
 - (D) None of the above
61. Antibody marker of HBV acute infection is :
- (A) anti HBs
 - (B) anti HBc IgG
 - (C) anti HB_e
 - (D) anti HBc IgM

62. Identify a non specific test for syphilis from the following :
- (A) IC – Rapid strip test (B) TPPA
(C) TRUST (D) FTA-ABS
63. Which among the following is a DNA virus?
- (A) HAV (B) HBV
(C) HCV (D) HEV
64. Malaria antigen test is based on the principle :
- (A) CIA (B) PCR
(C) Immunofluorescence (D) None of the above
65. Which among the following is not a character of HIV 2?
- (A) It progresses at a slower rate
(B) Mainly present in West Africa
(C) Contains the envelope protein gp⁴¹ and gp¹²⁰
(D) Lower rate of transmission
66. Australia antigen is the surface component of :
- (A) HCV (B) HEV
(C) HIV (D) HBV
67. Malignant tertiary malaria is caused by :
- (A) *P. falciparum* (B) *P. vivax*
(C) *P. ovale* (D) *P. malariae*
68. Find out the false statement from the following regarding specific treponemal tests :
- (A) Positive test indicate infection
(B) Tests may become non reactive in late syphilis
(C) Used to check positive cardiolipin test reaction
(D) Tests remain positive for many years
69. The risk of HIV transmission through infected blood transfusion is estimated to be :
- (A) 5% (B) 30%
(C) 70% (D) 90%
70. Serological marker of active HCV infection is :
- (A) Anti-HCV (B) HCV RNA
(C) Both (A) and (B) (D) None of the above

71. Ham test is used for the definitive diagnosis of :
(A) CHAD (B) PNH
(C) Hereditary hydrocytosis (D) None of the above
72. Find out the false statement regarding HDNB :
(A) The affected infant presents with anemia
(B) Reticulocyte is increased
(C) Nucleated RBC is increased
(D) Conjugated bilirubin is increased
73. Anticoagulant to blood ratio of CPDA-1 in a blood bag is :
(A) 1 : 6 (B) 1 : 7
(C) 1 : 8 (D) None of the above
74. Laboratory diagnosis of AIHA include :
(A) Reticulocyte count (B) DCT
(C) Haptoglobin test (D) All of the above
75. Amniocentesis is indicated when the maternal antibody titre is :
(A) 1 : 8 (B) 1 : 16
(C) 1 : 32 (D) None of the above
76. Each unit of whole blood increase the Hb level :
(A) 0.5 g/dl (B) 1 g/dl
(C) 2 g/dl (D) None of the above
77. Name the chart used to measure the severity of HDN :
(A) Liley's chart (B) Cusum chart
(C) Levey-Jenning's chart (D) Shewhart chart
78. Massive transfusion can lead to :
(A) Hypothermia (B) A fall in blood pH
(C) Excess of citrate (D) All of the above

79. Identify a false statement regarding multiple transfusion :
- (A) Whole blood transfusion is preferred
 - (B) Blood less than 10 days should be used for transfusion
 - (C) Patients should be given iron chelating agents
 - (D) None of the above
80. Which blood component is administered in Von Willebrand disease?
- (A) Packed red cell
 - (B) Cryoprecipitate
 - (C) Platelet concentrate
 - (D) FFP
81. Which of the following methods of transfusion eliminates the risk of alloimmunization, haemolytic, febrile and allergic reaction and transmission of diseases?
- (A) Massive transfusion
 - (B) Exchange transfusion
 - (C) Autologous transfusion
 - (D) Whole blood transfusion
82. A person who needs red blood cell transfusion has a history of febrile transfusion reaction, which is the component of choice in this case?
- (A) Packed red blood cells
 - (B) Fresh whole blood
 - (C) Leukocyte poor red blood cell
 - (D) All the above
83. Intra operative blood salvage, Post operative Blood salvage, Acute isovolaemic haemodilution are types of :
- (A) PRP preparation methods
 - (B) Exchange transfusion methods
 - (C) Packed cell preparation methods
 - (D) Autologous transfusion methods
84. The mandatory Pre transfusion tests to be done for autologous transfusion are :
- (A) ABO Typing and Rh Typing
 - (B) Major and Minor Cross Matching
 - (C) No tests are required
 - (D) All tests including screening tests
85. Which of the following is suitable blood for exchange transfusion in case of Haemolytic disease of new born caused by ABO incompatibility?
- (A) Identical blood with Rh negative blood type
 - (B) Identical blood with Rh positive blood type
 - (C) Blood identical to Mother's blood
 - (D) Blood group O, with Rh negative blood type

86. The interval between two apheresis procedures should be at least :
- (A) 24 hours (B) One week
(C) Three months (D) 48 hours
87. Of the blood oxygen carriers which of the following has the longest shelf life?
- (A) Stroma free Haemoglobin (B) Perflourochemical compounds
(C) Cross linked Haemoglobin (D) Micro encapsulated haemoglobin
88. Which of the following is used as sedimenting agent for granulocytapheresis?
- (A) Crystalloids (B) Albumin
(C) Hydroxyethyl starch (D) Dexamethasone
89. A form of apheresis which is a standard therapy used for treatment of Cutaneous T Cell Lymphoma and also Graft versus host reaction is :
- (A) Plasmapheresis (B) Therapeutic leucopheresis
(C) Photopheresis (D) Neocytapheresis
90. Haemoglobin based Oxygen carriers do not require _____ for Oxygen release.
- (A) 2,3-Diphosphoglycerate (B) 2,3-Diphosphoglycomate
(C) Pyridoxal phosphate (D) Thrombosol
91. As part of specific requirements all blood units should be typed for Rh D antigen and D^u Antigen. All RhD negative and Du positive persons are considered as D positive when they are (a) _____ and D negative when they are (b) _____ :
- (A) (a) Recipient (b) Donor
(B) (a) Donor (b) Recipient
(C) Always considered as positive as donor and as recipient
(D) None of the above
92. Which of the following is false regarding quality control of ABO antisera?
- (A) No Heamolysis
(B) No turbidity
(C) Clear cut reaction with known antigen
(D) Weekly quality assessment

93. For Quality assurance in Rh grouping we use :
- (A) Monoclonal Anti D
 - (B) Polyclonal Anti D
 - (C) Blend of IgM + IgG monoclonal anti D
 - (D) Use of one IgM and one blend of IgM+ IgG
94. Acceptable titre as part of quality control for monoclonal Anti A and Anti B sera is :
- (A) 1 : 32
 - (B) 1 : 128
 - (C) 1 : 256
 - (D) 1 : 64
95. Inclusion of O cells and autocontrol is a must in reverse grouping to rule out :
- (A) Bombay blood group
 - (B) Allo antibodies
 - (C) Rouleaux formation
 - (D) All the above
96. Polyspecific antihuman globulin is usually available as a combination of anti IgG and a anti complement component except :
- (A) Anti C₃ d
 - (B) Anti C₄ d
 - (C) Anti C₁ b
 - (D) Anti C₃ c
97. All records and registers pertained to blood bank should be maintained for :
- (A) 10 years
 - (B) 15 years
 - (C) 5 years
 - (D) None of the above
98. All blood banks in India is regulated by :
- (A) Drug and Cosmetic Act
 - (B) State Drug licensing act
 - (C) Food and Drug administration act
 - (D) Occupational Safety and health administration
99. As part of occurrence reporting a sentinel event is that defined as :
- (A) Any process which did not affect the outcome
 - (B) A complication that occurred to the donor
 - (C) An occurrence not attributed to a person's mistake
 - (D) An unexpected occurrence involving death or serious injury
100. Periodic Medical audit in blood banks is to be conducted by :
- (A) Biosafety assurance committee
 - (B) Quality assurance committee
 - (C) Hospital transfusion committee
 - (D) BTS committee

SPACE FOR ROUGH WORK

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