

**The West Bengal University of Health Sciences**  
**B.Sc. in Medical Laboratory Technology 3<sup>rd</sup> Year August-September, 2026 Examination**

**Subject: Blood Bank and Special Hematology**

**Time: 3 hrs.**

**Full Marks: 100**

*Attempt all questions*

1. Select the most appropriate option :

20 x 1

- a) Which one is clinically important concerning blood grouping system?  
 i) MNS                      ii) Lutheran                      iii) Rhesus                      iv) Duffy
- b) Incomplete antibodies can cause agglutination of RBC when::  
 i) Suspended in albumin                      ii) Suspended in saline  
 iii) Treated with enzyme                      iv) All are incorrect
- c) Which one is not the genotype of Blood group A?  
 i) AO                      ii) AA                      iii) AB                      iv) None of them
- d) Chemically bold group antigens are:  
 i) Lipoprotein                      ii) Glycoprotein                      iii) Mucoprotein                      iv) Lipid
- e) Indirect Coomb's test is used to detect:  
 i) Antibody in serum                      ii) Antigen in serum                      iii) Antigen on cell surface                      iv) Antibody on cell surface
- f) Immune anti bodies are usually:  
 i) IgM                      ii) IgG                      iii) IgA                      iv) IgE
- g) Potent Anti D (IgM) serum is showing no agglutination with RBC. Interpretation is:  
 i) Rh positive                      ii) Rh negative                      iii) Coomb's test to be done                      iv) Test to be repeated
- h) Which is an inactive gene?  
 i) O                      ii) H                      iii) h                      iv) B
- i) For preparation of platelet concentrate blood is stored at:  
 i) 4-8<sup>0</sup>C                      ii) 22-24<sup>0</sup>C                      iii) 30-32<sup>0</sup>C                      iv) R.T
- j) Which is not the genotype of Rh(D) positive person?  
 i) CDE/cDE                      ii) Cde/cdE                      iii) cDe/cde                      iv) cdE/cDE
- k) To donate blood, for men, Hb level in Gm/dl must be above:  
 i) 6                      ii) 8                      iii) 10                      iv) None is correct
- l) About donation of cord blood, which of the following statement is incorrect?  
 i) It is taken from mother's side of the cord                      ii) It is taken from baby's side of the cord  
 iii) It is not rich in stem cells                      iv) All statements are incorrect
- m) Rh hemolytic disease of new born usually occur from:  
 i) First pregnancy                      ii) Second pregnancy                      iii) Third pregnancy                      iv) Fourth pregnancy
- n) Von Willebrand factor remaining in complex with:  
 i) F V                      ii) F VII                      iii) F VIII                      iv) F X
- o) Coomb's fluid is not:  
 i) Anti IgG                      ii) Anti IgM                      iii) Primary antibody                      iv) Secondary antibody
- p) P.T. is an indicator of defect in:  
 i) Extrinsic pathway                      ii) Intrinsic pathway  
 iii) Intrinsic and common pathways                      iv) Extrinsic and common pathways
- q) Number of nucleolus in lymphoblast is:  
 i) 1                      ii) 3                      iii) 5                      iv) More than 5
- r) Benzidine used in MPO stain is:  
 i) Di- amino                      ii) Di- chloro                      iii) Di- methyl                      iv) Di-methoxy
- s) Enlargement of spleen is an outstanding feature in:  
 i) CLL                      ii) ALL                      iii) CML                      iv) AML
- t) Calculation of I.N.R. is essential for patients:  
 i) Of chronic liver disease                      ii) Undergoing anticoagulant therapy  
 iii) With history of bleeding disorder                      iv) All of them



**P.T.O.**

2. Answer the following : 5 x 2
- Why blood group Antigens other than A,B and D are less important clinically?
  - Principle of reverse (Serum) grouping.
  - Classification of ALL
  - Philadelphia chromosome.
  - Interpretation of results of PT and APTT in combination.
3. Write short notes on **any six** of the following : 6 x 5
- Describe the uses of different blood components.
  - ABO-HDN.
  - Indications for whole blood transfusion.
  - Factor VIII.
  - Why blood components are preferred over whole blood?
  - F.F.P.
  - Indications for doing the tests for bleeding disorder.
  - AML.
4. Answer **any one** of the following questions : 1 x 10
- What do you mean by cyto- chemical stain? What are the applications of these stains? Enumerate the common cytochemical stains mentioning their uses. 2+2+6
  - Enumerate the persons who are otherwise fit, but can not donate blood. 10
5. Answer **any two** of the following questions : 2 x 15
- What is Coomb's test? What are the utilities of different types of Coomb's test? Discuss about quality control of Coomb's test. What is Coomb's fluid? 3+2+5+5
  - Mention the tests done before component separation. What are the changes that occur in blood on storage? What are the tests done before issue of blood? 3+10+2
  - What is meant by coagulation blood? Discuss about different pathways of coagulation along with a flow chart. How you shall prepare a set for doing bleeding time by Ivy's method? 3+10+2

