THE KENYA POLYTECHNIC UNIVERSITY COLLEGE

SCHOOL OF HEALTH SCIENCES AND TECHNOLOGY

DEPARTMENT OF BIOMEDICAL LABORATORY SCIENCES AND TECHNOLOGY

DIPLOMA IN MEDICAL LABORATORY SCIENCES

END OF YEAR 1 EXAMINATION

NOVEMBER SERIES 2011

BLOOD TRANSFUSION

TIME: 3 HOURS

INSTRUCTIONS

This paper consists of TWO SECTIONS: A and B.

Answer ALL questions in SECTION A and B.

Circle the letters of ALL correct answers in each multiple choices questions

Any wrong answer for multiple choices will be penalized (0.5 marks)

SECTION A (40 Marks)

1. The anti A, is found in the following blood groups-:
   (a) Blood group B
   (b) 25% of A2 B
   (c) 2% of A2 B
   (d) 25% of A2

2. The possible genotypes of blood group phenotype A1 is/are
   (a) A1, A2
   (b) A1 B2
   (c) A1 B1
   (d) A2 B

3. Reverse grouping in useful in-:
   (a) Detecting presence or absence of antigen A and B
   (b) Compatibility testing (X- Match)
   (c) Detecting antibody A and B
   (d) Exchange transfusion

4. Spontaneous clumping of all red blood cells refers to:-
   (a) Poly-agglutination
   (b) Rouleaux formation
   (c) Pan – agglutination
   (d) Auto – agglutination

5. The importance of controls in ABO grouping is to:-
   (a) Ensure correct procedures are performed
   (b) Test the accuracy time taken by the test
   (c) Test the expiry of reagents used.
   (d) Confirm forward blood grouping.

6. Rh null individuals has the following characteristics
   (a) Lack the Rhesus D antigen
   (b) Has natural occurring antibody D
   (c) Is devoid of all Rhesus antigens
   (d) Has allele X1 r

7. The Bombay phenotypes has-:
   (a) Has antibody A and B and H
   (b) Has Large amount of antigen H
   (c) Lacks the H gene
   (d) Can be given to blood group O without problem.
8. In preparation of Eluates the following is / are used
   (a) AB Serum
   (b) O Serum
   (c) Dextrose solution
   (d) 45% albumin

9. The significance of Rhesus blood system discovery lead to
   (a) Detect incompatibility before transfusion
   (b) Discovery of HDNB and its management and prevention
   (c) Improvement in ABO blood groups
   (d) Blood transfusion becomes more complicated

10. The Weiner classification Ro is equivalent to fisher classification as
   (a) DcE
   (b) DCE
   (c) Dce
   (d) dCE

11. The D^u test is done to-:
   (a) To confirm if one is Rhesus +ve
   (b) To detect the weak D^u antigen
   (c) To detect cells sensitized in vivo
   (d) To detect cells sensitized in vitro

12. The significance of soluble antigen is/are
   (a) Are found in the red blood cells
   (b) Aids in grouping blood group O
   (c) Can be used in forensic medicine for detection of antigen in blood stains.
   (d) Not used for detection of ABO agglutinogens

13. In Rhesus grouping techniques the following is/are used
   (a) Commercial anti A
   (b) Commercial anti B
   (c) Commercial anti D
   (d) Commercial anti H

14. Source of error in Rhesus grouping includes
   (a) Rouleaux Formation
   (b) Failure of incubation to allow sensitization of the cells
   (c) Use of expired human cells
   (d) Use of 4% cell suspension

15. Blood group specific substances is/are
    (a) Soluble in alcohol
    (b) Soluble in water
    (c) Are lipo-proteins
    (d) Muco-proteins

16. The anti A and anti B in ABO systems are
    (a) Natural occurring antibodies
    (b) Belong to Ig G class
    (c) Belong to Ig M class
    (d) Are able to cross the placenta and cause HDNB

17. Cells are washed to -:
    (a) Avoid agglutination
    (b) Make them clean and visible
    (c) Expose antigenic sites
    (d) Remove antibodies which may interfere with the reaction

18. Natural occurring antibodies is/are
    (a) Occur early at birth
    (b) Occur later after birth
    (c) Are incomplete antibodies
    (d) Reacts better at 37^0C

19. When the mother is genotype OO and the father is AO, the possible phenotype off springs is/are
(a) A
(b) B
(c) AB
(d) O

20. A Direct Coombs test is done to:-
    (a) To detect sensitized cells in vitro
    (b) Detect weak antigen D
    (c) Confirm Rhesus negative individual.
    (d) To detect sensitized cells in vivo

21. In the ABO blood group system there are:-
    (a) Three genotypes
    (b) Four genotypes
    (c) Six genotypes
    (d) Four phenotypes.

22. The anti H react with the following cells EXCEPT.
    (a) A cells.

(b) B cells
(c) AB cells
(d) Bombay cells.

23. The Bombay phenotype has the following antibodies Except
    (a) Anti A
    (b) Anti D
    (c) Anti H
    (d) Anti O
24. When the allelic genes are not alike the individual is said to be :-
    (a) Recessive
    (b) Homozygous
    (c) Heterozygous
    (d) Dominant
25. ABO antibodies are :
    (a) Not able to cause severe HDNB
    (b) Poorly developed at birth
    (c) Can not be detected during X-match
    (d) Are able to cross placenta and cause HDNB.
26. The source of Anti H is /are:
    (a) I bevis Amera
    (b) Ulex Europeans
    (c) Dolichous biflorous
    (d) Crorale muconate
27. The removal of antibody that has been absorbed to the ABC is known as
    (a) Absorption
    (b) Elution
    (c) Agglutination
    (d) Absorption

28. Rhesus antibodies can develop from
    (a) Severe anemia
    (b) Infection
    (c) Blood transfusion
    (d) Pregnancy

29. Incomplete antibodies react optimal at:
    (a) 30^{o}C
    (b) Saline room temperature

(c) Coombs 37°C
(d) 4°C

30. Rhesus null individuals are of:
    (a) Genotype ---/---
    (b) Phenotype -Ce/---
    (c) Are Devoid of ABO antigens
    (d) Have the Rhesus antigen
31. The following reactions are of blood group?

Anti A	Anti B	A cell	B cells	O cells
+	-	+	+	-

    (a) A2
    (b) A2B
    (c) A
    (d) Bombay Phenotype

32. Anti A1 can react with following cells
    (a) H Cells
    (b) B Cells
    (c) AB cells
    (d) A1 Cells

SECTION B (60 MARKS)

33. Discuss on blood group specific substances. (20 Marks)

34. Describe the following

    (a) Sub Groups of blood Group A (10 Marks)

    (b) Variant of D antigen (10 Marks)

35. Explain the following terms:

    (a) Rhesus null (5 Marks)

    (b) Prozone Phenomena (5 Marks)

    (c) Reverse grouping (5 Marks)

(d) Auto-agglutination (5 Marks)