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 II EXAMINATION

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. In forward ABO grouping the tests uses:-
   (a) Known patients serum
   (b) Known commercial Anti A and Anti B
   (c) The 22% albumin
   (d) Detects unknown patient antibodies

2. A patient blood group A, the suitable donor/s is/are:
   (a) Blood group AB
   (b) Blood group A
   (c) Blood group B
   (d) Bombay phenotype

3. In both cross matches (major and minor) the main object/s is/are:
   (a) To detect any antibodies in the donor which may destroy patients RBC
   (b) To make sure blood is free from HIV/Hepatitis
   (c) To detect any antibodies reaction in the patient serum which may destroy Donor RBC
   (d) To confirm if patient blood volume is adequate

4. In the X-match the following phase/s uses the AHG (anti human globulin)
   (a) Saline 37°C
   (b) Albumin 37°C
   (c) Enzyme technique
   (d) Coombs 37°C

5. The coombs phase when at agglutinates if indicates which type of immunoglobulin/s:
   (a) Ig A
   (b) Ig G
   (c) Ig M
   (d) Ig E

6. Factors which may affect antibody titration is/are:
   (a) Quality of the blood used
   (b) Use of a microscopy is a must
   (c) Medium of suspension
   (d) Incubation

7. The main importance of Anti A and Anti B titration is/are:
   (a) To screen for universal donors
   (b) To confirm the D^u testing.
   (c) To test the strength of antigen A and antigen B
   (d) To test for competence of the technologists.

8. Sources of error in antibody titration is/are:
   (a) Inadequate incubation time and temperature
   (b) Use of Inadequate reagents
   (c) Poor serial dilutions done.
   (d) Use of the right calibrated automatic pipettes

9. Anti A and Anti b occur naturally and belong to:
   (a) Ig A class
   (b) Ig M class
   (c) Ig E class
   (d) Ig C class

10. Febrile transfusion reaction is associates with:
    (a) Sterile saline
    (b) Leucocyte antibodies
    (c) Fever and chills
    (d) Dextran

11. The following is/are associated with hemolytic transfusion reaction intravascular corpuscular reaction
    (a) Cell destruction is very slow.
    (b) Complement mechanism is NOT involved
    (c) Hyper globinaemia occurs later after transfusion
    (d) Bilirubin level increases rapidly

12. Unfavorable effects of transfusion reaction is/are:
    (a) Oedema
    (b) Heart failure
    (c) ISO – Immunization
    (d) Increase of Hemoglobin

13. The advantage of using red blood cells over whole blood is/are:
    (a) Significance reduction in the level of citrate
    (b) Equal oxygen capacity if half the volume
    (c) Are easily available
    (d) It reduces safety of blood

14. Cryoprecipitate is indicated in the treatment of:
    (a) Hemophilia B
    (b) Factor XIII deficiency
    (c) Hemophilia A
    (d) Factor IX deficiency

15. Direct coombs is associated with:
    (a) Haemolytic Disease of the new born
    (b) Antibody screening test
    (c) Detecting sensitized cells in Vitro
    (d) Detecting sensitized cells in Vivo

16. Which of the following immunoglobulin crosses the placenta
    (a) Ig A
    (b) Ig G
    (c) Ig D
    (d) Ig M

17. The management of HDNB is /are
    (a) Phototherapy
    (b) Detection of immune antibodies
    (c) Advising the mother not to give birth again.
    (d) Getting married to Rhesus negative men

18. The role of a placenta is/are:
    (a) Detection of immune antibodies.
    (b) To prevent busy from HDNB
    (c) Exchange transfer organ fir the foetus
    (d) Transfer of nutrients from mother to foetus

19. A candidate for a Rhogam must be
    (a) Over 18 years of age
    (b) Mother must be rhesus negative and not immunized with Anti D
    (c) Baby must be jaundiced
    (d) Mother must be ICT positive

20. Causes of HDNB is /are:
    (a) Compatible ABO
    (b) Incompatible ABO
    (c) Ii blood system
    (d) Rhesus system

21. The purpose of absorption in blood transfusion is/are:
    (a) Used to prevent transfusion reaction
    (b) Used in identification of antibodies
    (c) Used in confirmation of antigens specificity
    (d) To confirm blood is free from HIV.

22. Transfusion reactions is encountered in

(a) Antigen antibody reactions

(b) Careful procedures when followed

(c) Viral Infections

(d) Parasitic infections

23. The purpose of reverse grouping is to:

(a) Ensure blood is compatible

(b) Detect WBC antigens

(c) Counter check forward grouping

(d) Detect antigens on the cells

24. Febrile transfusion reactions my be caused by

(a) sterile giving set

(b) Pyogens

(c) Leucocyte antibodies

(d) HLA antigens

25. Plant agglutinins are also referred to as:

(a) Lectins

(b) Antigens

(c) Plant agglutinogens

(d) Pseudo agglutinins

26. The ability of an antigen to stimulate the production of corresponding antibodies is known as its:

(a) Specificity

(b) Avidity

(c) Titre

(d) Immunogenicity

27. Direct coombs is associated with

(a) Sensitized cells in Vitro

(b) Sensitized cells in Vivo

(c) First Pregnancy in Rhesus negative mothers

(d) All pregnancies of Rhesus negative mothers

28. The terminal sugar for blood group B is

(a) N- acetyl galactosamine

(b) Oligosachrides

(c) Pentose

(d)D – galactose

29. Rhesus null phenotype is as a result of:

(a) X o r gene

(b) Precursor substance

(c) X1 R

(d) X2 R

30. Prozone is due to:

(a) Any antibody antigen ratio than 1:1

(b) Blocking antibodies

(c) incomplete antibodies

 (d) Mixed field agglutination

31. In blood transfusion investigation:

(a) A nurse must be present to explain how the reaction occurred.

(b) Urine sample is not necessary.

(c) Post and pre – sample are re – grouped and re – cross matched

 (d) Only post sample and donor units are needed

32. The dcE fisher is equals to weiner

(a) Rho   (b) Rh1

 (c) Rh2   (d) Rh Z

33. Transfusion reactions is encountered in

       (a) Antigen antibody reactions

       (b) Careful procedures when followed

       (c) Viral Infections

       (d) Parasitic infections

SECTION B (60 MARKS)

1. Discuss in details the compatibility testing   (20 Marks)

2. Describe the following

   (a) Causes of HDNB   (10 Marks)

   (b) Laboratory investigation on transfusion reaction   (10 Marks)

3. Explain the following terms:

   (a) Antibody identification   (5 Marks)

   (b) The Febrile reaction   (5 Marks)

   (c) Rhogam   (5 Marks)

   (d) Immune antibodies   (5 Marks)