THE KENYA POLYTECHNIC UNIVERSITY COLLEGE

SCHOOL OF HEALTH SCIENCES AND TECHNOLOGY

DEPARTMENT OF BIOMEDICAL LABORATORY SCIENCES AND TECHNOLOGY

DIPLOMA IN MEDICAL LABORATORY SCIENCES

FINAL YEAR EXAMINATION

BLOOD TRANSFUSION/HAEMATOLOGY

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. Anaemia is characterized by:-
   (a) Deficiency of haemoglobin concentration
   (b) Pregnancy in young women.
   (c) The age and sex of an individual only.
   (d) Over production of blood elements

2. Causes of anaemia is/are
   (a) Early pregnancy.
   (b) Family planning pills.
   (c) Deficiency of erythropoesis factors
   (d) Deficiency of platelets

3. Morphological classification of anaemia is associated with the following
   (a) Iron deficiency anaemia
   (b) Megaloblastic anaemia
   (c) Packed cell volume
   (d) Mean cell volume

4. When MCH, MCHC and MCV are low, this is suggestion of:-
   (a) Megaloblastic anaemia
   (b) Aplastic anaemia
   (c) Iron deficiency anaemia
   (d) Macrocytic polychromatic anaemia

5. The most rich sources of folic acid is/are
   (a) Fish
   (b) Chicken
   (c) Kidney
   (d) Liver

6. In pancytopaenia anaemia:-
   (a) Neutrophils are increased
   (b) Neutrophils are reduced
   (c) Platelets are normal in number and morphology
   (d) Polycythaemic is present

7. Sickle cell anaemia will occur in:-
   (a) Any individual with trace of HBS
   (b) Sickle trait only
   (c) Homozygous HBS
   (d) Heterozygous HB AS

8. In electrophoresis the fastest hemoglobin is/are
   (a) HB A
   (b) HB S
   (c) HB F
   (d) HB A2

9. The fibrinogen group include the following factor
   (a) V
   (b) X
   (c) IX
   (d) VII

10. The tests to detect abnormalities in intrinsic system is/are
    (a) Prothrombin time index test (P.T.I)
    (b) Duke method
    (c) Prothrombin time test and kaolin (PTTK)
    (d) IVYS method

11. The variation in both size and shape is associated with:-
    (a) Aniscytosis
    (b) Polychromasia
    (c) Poikilocytosis
    (d) Aniso – poikilocytosis

12. The Bombay phenotype individual has the following characteristics:-
    (a) Is a non – secretor
    (b) Has antigens A, B and H
    (c) Lacks H gene
    (d) Has sese

13. The management of HDN B is/are
    (a) Getting managed to Rhesus negative men.
    (b) Exchange transfusion
    (c) Advising the mother not to give birth again
    (d) Daily legal abortion

14. The role of a placenta is/are
    (a) To prevent the baby from HDNB
    (b) Exchange oxygen for the foetus
    (c) Transfer of nutrients from mother to foetus
    (d) Prevention of HDNB by rhogam use

15. A candidate for a Rhogam must be
    (a) Over 18years of age
    (b) Mother must be rhesus negative and not immunized with anti D
    (c) Must be given within 72 hrs after birth
    (d) Baby must be jaundiced

16. The following are reasons for donor deferral except
    (a) Vaccination in two weeks
    (b) Living below poverty line
    (c) High blood pressure
    (d) Sex of the donor

17. Recruitment of donors include-:
    (a) Visiting prison and commanding them to give blood
    (b) Visiting schools and giving them lectures
    (c) Looking for commercial donors.
    (d) Motivating them by giving them money

18. The advantage of packed cells over whole blood is /are
    (a) It is more nutrients than while blood
    (b) Equal oxygen capacity in half the volume
    (c) Significance reduction of infections diseases
    (d) Significance saving of time of transfusion

19. Fresh frozen plasma (FFP) is useful in-:
    (a) Anaemia patients
    (b) Patients with platelets count below 200 X 10^9 /L
    (c) Patients with deficiency of factor V and VIII mostly
    (d) Active bleeding patients

20. The compliment systems has the following characteristics
    (a) Are Ig E and Ig D antibodies
    (b) Destroyed by heat as 56^0c for half an hour
    (c) They belong to Ig E class only
    (d) They belong to Ig G class only

21. The 1st order of exclusion will appear if
    (a) Both parents are blood group A and the child is O
    (b) Both parents are blood Group B and child is O
    (c) Both parents are blood group A and child is A blood group
    (d) Both parents are blood group O and child is B

22. When the father is blood group AB and the mother is B the possible offspring is / are
    (a) Blood group O
    (b) Bombay phenotype
    (c) Blood group A
    (d) Blood group B

23. The Automation procedures has the following advantage/s:

(a) It is cheap in terms of purchasing

(b) It gives good quality assurance

(c) Can be done anywhere

(d) Does not require technical person to be in place

24. The pencil shaped cells are indicative of:

(a) Megablastic anaemia

(b) pernicious anaemia

(c) Aplastic anaemia

(d) Iron deficiency anaemia

25. Normal colour, shape and size is encountered in:-

(a) Aplastic anaemia

(b) Thalassamia

(c) Sickle Cell

(d) Haemolytic anaemia

26. Sources of error in Haemoglobin estimation is/are:

(a) Failure to wipe out the sacking pipettes

(b) Use of wavelength 540nm

(c) Warming colorimeter prior to testing

(d) Using manual estimation

27. A normal adult haemoglobin has

(a) Two alpha and two gamma

(b) Two alpha and two beta

(c) 2 gamma and 2 delta

(d) 2 alpha and 2 delta

28. A CPD is able to store blood for

(a) 21 days

(b) 28 days

(C) 35 days

(d) 3 weeks

29. In Kenya the most screened diseases for blood donors are EXCEPT

(a) HIV   (b) Hepatitis C   (c) Syphilis   (d) Malaria

30. The Xg blood system is

(a) Correct by Y – chromosome

(b) A sex linked blood group

(c) Causes HDNB

(d) Shows dosage effect

31. Incomplete antibodies can react optimally at the following phases **EXCEPT:**

(a) Coombs 37c^o

(b) Albumin 37c^o

(c) Saline 37c^o

(d) Saline room temperature

32. Febrile transfusion reaction may be caused by:

    (a) Pyrogens
    (b) (d) HLA Antigens
    (c) Sterile normal saline
    (d) Leucocytes

33. The anti A1 can be obtained from
    (a) Blood group B
    (b) Blood group A$_1$
    (c) Blood group A$_2$
    (d) Blood group A$_1$B
    (e) Blood group O

34. In P.B.F reporting the target cells are found in-

    (a) Megaloblastic anemia.
    (b) Haemolytic anemia
    (c) Aplastic anemia
    (d) Iron deficiency anemia

35, Reverse grouping can be used to-
    (a) Counter check forward grouping
    (b) counter check rhesus grouping
    (c) Detects ABO antibodies
    (d) Matching donor and recipient.

36 The method of haemoglobin estimation with most errors is;
    (a) Cyan met HB estimation
    (b) Sahlis method.
    (c) Automation method.
    (d) Haemoguel

37 Rhogam is given to mothers who-

(a) Have anti D in their serum.
(b) Have developed HDNB.
(c) Rhesus negative ,indirect coombs test negative
(d) Have given birth at the hospital.

38 MCV is decreased in which type of anemia?

(a) Megaloblastic anemia
(b) Aplastic anemia
(c) Iron deficient anemia
(d) Haemolltic anemia.

39. The deficient of factor V111 causes -

(a) Haemophilia A
(b) Haemophilia B
(c) Von willbrand disese
(d) Thrombocytosis

40. Bombay phenotype is differentiated from blood group O individuals by –
(a) use of commercial A and B antiserum
(b) use of O cells
(c) forward grouping
(d) use of anti D.

SECTION B (60 MARKS)

ANSWER ALL QUESTIONS IN THIS SECTION

1. (a) Discuss the Haemolytic Disease of the New Born.   (15 Marks)

    (b) List down five functions of platelets   (5 Marks)

2. (a) Discuss in detail megaloblastic anaemia   (15 Marks)

    (b) Explain first order of exclusion criteria.   (5 Marks)

3. Describe the following

(a) Clotting Time test   (10 Marks)

(b) Qualification of a donor   (10 Marks)