TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF MEDICAL SCIENCES

UNIVERSITY EXAMINATION FOR:

BACHELOR OF MEDICAL LABORATORY SCIENCES

AM L **4306: BLOOD TRANSFUSION SCIENCES I**

SPECIAL/ SUPPLIMENTARY EXAMINATIONS

SERIES: SEPTEMBER 2018

TIME: 2HOURS

DATE: SEPTEMBER 2018

Instructions to Candidates

You should have the following for this examination
-Answer Booklet, examination pass and student ID
This paper consists of Choose No Section(s). Attempt ALL questions.
Circle the correct answer in section A.

PAPER TWO SECTION **A;**

Attempt all questions in this section

1. How are immune antibodies acquired ?
   a. From Sensitized individuals
   b. From all individuals at any given time
   c. From Secretors only
   d. From all non-secretors
   e. From Only Lewis positive individuals
2. During titration what would dilution refer to,.
   a. Mixing blood sample with saline solution
   b. Mixing known serum and saline volumes

c. Mixing known cells and albumin volumes
d. Mixing known cell volumes with saline
e. Mixing known serum volumes with Cells

3. How woud best results be obtained during titration of anti-D?
   a. Testing to room temperature
   b. Testing Using 22% albumin
   c. Warming to 37^0C
   d. Refrigeration of the samples
   e. Testing at 4^0C
4. Which of the following is not one of the Factors leading to false results in serum grouping?
   a. Haemolyzed A or B cells
   b. Forgetting to add patients serum
   c. Strong rouleaux factors
   d. Wrong storage temperatures
   e. Fresh patients serum
5. The presence of free hemoglobin in supernatant serum during grouping means that?
   a. There was contamination in the Red Cells
   b. There was no reaction
   c. There was antigen-antibody reaction
   d. The serum used was inappropriate
   e. There are no antigens
6. Parent blood group mother OA and father BB which of the following genotype is not possible for the child
   a. AB
   b. OA
   c. BO
   d. OB
   e. All the above
7. Which of the following is the main aim of preparation standard sera
   a. Test for the presence of specific antigens
   b. Test for presence of specific antibodies
   c. Identify presence of autoantibodies
   d. Describe autoimmune disease
   e. Test for antibodies
8. Which of the following statements is true of crossmatch
   a. Is an in-vitro test
   b. Is always done in-vivo
   c. Normally done in utero
   d. Is an intravascular test
   e. Is an intravascular test

9. The room temperature phase of crossmatch detects?
    a. Warm complete antibodies
    b. Cold complete antibodies
    c. Warm incomplete antibodies
    d. Blocking antibodies
    e. Incomplete blocking antibodies only
10. Classification Blood group antibodies may involve which of the following ways
    a. Origin
    b. Activity
    c. Thermal Range
    d. All of the Above
    e. None of the above
11. Preparation of sera entails the following except?
    a. Donor Identification and screening
    b. Cell grouping
    c. Tests for suitability of sera
    d. Patient preparation
    e. Sera purification
12. Which of the following statement is true concerningTitre for anti-D
    a. Includes the Anti Human Globulin reaction
    b. Does not exceed 1:64
    c. Is important in Rh negative mothers
    d. Is not important in pregnancy
    e. May not prevent sensitization
13. Immunoglobulin separation methods include the following except?
    a. Fractionation
    b. Electrophoresis
    c. Iso-electric focusing
    d. Gel filtration
    e. All of the above
14. Which of the following is not a criteria for predeposit
    a. Donation can be made at weekly interval (1-5units)
    b. Last donation should be 72 hours before surgery
    c. Cross match is not required before each transfusion
    d. Screening test are performed as per normal donation
    e. Blood not required during or after the patient surgery normally is discarded
15. In vivo, red cells are carried and protected by the plasma, which helps in which of the following
    a. Regulated temperature
    b. Controlled pH

c. Adequate glucose supply
d. Removal of metabolic waste
e. All the above

16. Which of the following is not primary uses of Cryoprecipitate
    a. a plasma fibrinogen level of less than 1.0 g/L
    b. in DIC or fibrinogenolysis
    c. for hemophilia and von Willebrand's disease,
    d. a plasma fibrinogen level of less than 2.0 g/L
    e. None of the above
17. Which of the following is true about fresh frozen plasma
    a. is separated from whole blood and frozen more than 8 hours after collection.
    b. It can be stored for up to 5 years
    c. retains albumin, globulin, and activity of vitamin-K dependent factors (II, VII, IX, and X),
    d. Contains all coagulation factors except has slightly reduced amounts of clotting Factors V and VIII
    e. should be transfused within 1 year of collection
18. Which of the following is the characteristics of human serum albumin (HSA)
    a. has a prolonged shelf-life without refrigeration
    b. manufactured from pooled human plasma that is ultrafiltrated and heat sterilized.
    c. ideal solution for the management of patients with severe hypoalbuminemia
    d. 25% HSA contains 0.25g albumin/ml.
    e. All the above
19. Which of the following is not a type of blood transfusion
    a. Cryoprecipitate
    b. Platelet and Clotting Factor Transfusions
    c. Plasma Transfusions
    d. Whole blood transfusion
    e. AlLthe above.
20. Which of the following is true about serum albumin
    a. Human serum albumin (HSA) is manufactured from pooled human plasma that is ultrafiltrated and heat sterilized.
    b. It has a prolonged shelf-life without refrigeration.
    c. Hyperoncotic 25% HSA contains 0.25g albumin/ml (10 times that of plasma) and has a COP of 200 mmHg.
    d. Because of this increased albumin concentration, it would appear an ideal solution for the management of patients with severe hypoalbuminemia
    e. All the above are true
21. Which of the following measures can be used to prevent circulatory overload
    a. Packed cell should be used instead of whole blood.

b. Packed cells should be given slowly over 4 hours.
c. In patient at risk rate of 100 ml per hour or less are appropriate.
d. Diuretics should be given and only one or two units of concentrated red cells should be transfused in any 24 hour period.
e. All the above

22. Which of the following is true about Red blood cells life span
    a. In protected natural environment life span of RBC is 110-120 days
    b. ATP is closely associated with red cell viability
    c. Citrate-phosphate-dextrose (CPD) extend RBC Shelf life to 28 days
    d. Citrate-phosphate-dextrose-adenine (CPDA-1) extend RBC Shelf life to35 days
    e. Acid-citrate-dextrose Contains citric acid, sodium citrate, and dextrose and is commonly used to store RBC

23. Blood group system antigens may have the following terminal residues
    a. Fatty acids
    b. Vitamins
    c. Glycophorin
    d. Poisonous
    e. Nucleotides

24. The direct gene product is?
    a. Protein
    b. Glucose
    c. Lipids
    d. Vitamins
    e. Sphingolipid
    .

25. The ABO blood group system antigens are made by the ABO genes in presence of?
    a. Gene H
    b. Antigen H
    c. Antigen D
    d. Antigen O
    e. A antigen

26. Which of the following is a criteria for Serum donor exclusions.
    a. Are different from other blood donors
    b. Are the same as other blood donor exclusion criteria
    c. Are determined by the clinicians
    d. May be ignored from time to time
    e. Cannot prevent donations

27. Hazards associated with blood transfusion include the following except?

a. Oliguria
b. Iron overload
c. Fainting
d. Circulatory overload
e. Aesthenia

28. The vaso-vagal attack during blood donation may present with?
    a. Slower heart rate
    b. Loss of consciousness
    c. Normal heart rate
    d. Good eye-sight
    e. Tachycardia
29. Monthly donations may led to the development of anaemia due to which of the following
    a. Water embolism
    b. Air embolism
    c. Vessel embolism
    d. Needle stylette embolism
    e. None of the above
30. Parent blood group mother AA and father BB which of the following genotype is possible for the child
    a. AB
    b. OA
    c. BO
    d. OO
    e. AA

Section B

Answer all the questions

31.A) Describe ABO serum grouping (3 marks)

31. B) Describe the other name given to this method (2marks)

31. C) Describe in detail the process or methods of ABO serum grouping (15marks)

32.A) Describe the inhibition or neutralization test and explain the significance of this test (10 marks)

32. B) Describe how to prepare a washed cell suspension (10 marks)