



# TECHNICAL UNIVERSITY OF MOMBASA

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FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF MEDICAL SCIENCES

**UNIVERSITY EXAMINATION FOR:**

**BACHELOR OF MEDICAL LABORATORY SCIENCES**

**AML 4312 : BLOOD TRANSFUSION II**

**SPECIAL SUPPLEMENTARY EXAMINATION**

**SERIES:** Select series 2017

**TIME:** 2 HOURS

**DATE:** Pick Date Sep 2017

## Instructions to Candidates

You should have the following for this examination

*-Answer Booklet, examination pass and student ID*

This paper consists of **TWO** Section(s). Attempt ALL questions.

**Circle the correct answer in section A.**

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Section A

### AML 4312 Blood Transfusion II

1. Donor screening includes the following except?
  - a. Donor registration
  - b. Evaluation of donor history
  - c. Physical examination of donor
  - d. Testing for HIV and Hepatitis virus
  - e. Evaluation of donor questionnaire
2. Which of the following is not part of the donor bank laboratory layout
  - a. Teaching laboratory
  - b. Neucleic acid testing laboratory
  - c. Reagent preparation laboratory
  - d. Component preparation
  - e. Quality control laboratory

3. The production of active amines and inflammatory agents will lead to the development of?
  - a. Fever
  - b. Amenorrhea
  - c. Feeble pulse
  - d. Anorexia
  - e. Ataxia
4. The following will most likely give accurate information on the self-exclusion questionnaire
  - a. Remunerated donors
  - b. Voluntary non remunerated donors
  - c. Family donors
  - d. Replacement donors
  - e. All of the above
5. The following are temperature ranges associated with transport and storage of whole blood
  - a. Transport of preprocessed blood  $+20^{\circ}\text{C}$  for  $<6\text{hrs}$
  - b. Storage of processed or preprocessed blood  $4^{\circ}\text{C}$  up to 35days
  - c. Transport of processed blood  $20^{\circ}\text{C} - 24^{\circ}\text{C}$  up to 24hrs
  - d. Transport of processed blood  $2^{\circ}\text{C} - 10^{\circ}\text{C}$   $<24\text{hrs}$
  - e. Transport of platelets at  $2^{\circ}\text{C}$  to  $10^{\circ}\text{C}$
6. Formulation of a national blood policy prevents the following
  - a. Coordinated establishment of blood banks
  - b. Thriving of dubious blood banks
  - c. Ethical handling of blood
  - d. Clear cut guidelines on use of blood products
  - e. Well planned blood donation
7. International Society of Blood Transfusion recommends the following as safe donors
  - a. Remunerated donors
  - b. Autologous donors
  - c. Replacement donors
  - d. Family donors
  - e. Friend donors
8. Destruction of Red cells is mediated by the antibodies through the following pathways
  - a. Complement activation and cell damage
  - b. Platelet aggregation
  - c. Opsonization and phagocytosis
  - d. Immune clearance
  - e. All of the above
9. Opsonins involved in adverse reactions of blood transfusion include subsets of  $\text{C}_5$  and \_\_\_\_\_?
  - a.  $\text{C}_3$
  - b.  $\text{C}_5$
  - c.  $\text{C}_6$
  - d.  $\text{C}_8$
  - e.  $\text{C}_1$

10. Blood group O donors may not passively transfer the following antibodies to recipient
- Anti-A,B
  - Anti-B
  - Anti-C
  - Anti-A
  - None of the above
11. Transfusion of lysed blood may be as a result of the following except?
- Frozen blood
  - Overheated blood
  - Cool blood
  - Blood under pressure
  - Vigorously shaken blood
12. Recommended laboratory tests during transfusion reactions include?
- Repeat crossmatch
  - Repeat Rh testing only
  - Blood pressure
  - Fever
  - Repeat TTIs
13. Passively acquired antibodies from donor blood may be responsible for the destruction of?
- Patient antibodies
  - Patient Red Cells
  - Donor Red Cells
  - Leucocytes
  - Donor platelets
14. The following immunoglobulin class is implicated in transfusion reactions
- IgG1
  - IgD
  - IgG2
  - IgM
  - IgG4
15. The following statements are true of the occurrence of Rh-haemolytic disease
- Occurs only in the first born
  - Is less common in pregnancies after the first
  - Occurrence is usually predictable in subsequent pregnancies
  - Rh haemolytic disease does not occur in dark individuals
  - Rh haemolytic disease occurs only in mongoloids
16. The following features are characteristic of the blood picture in ABO HDN
- Microspherocytosis
  - Stomatocytosis
  - Elliptocytosis
  - Pinocytosis
  - Acanthocytosis

17. The hematocrit of PRBCs has the following approximate value
- 50 - 70 mls
  - 40 - 55 mls
  - 45 - 55 %
  - 60 -70%
  - 180 - 200%
18. Haemoglobin concentration after transfusion of one unit increases by the following value
- 2grms/dL
  - 1gram/dL
  - 5gram/dL
  - 10gram/dL
  - 100gram/dL
19. The following are indications for use of Fresh frozen plasma except
- Microvascular bleeding
  - Multiple coagulation factor deficiencies
  - Vitamin K dependent Coagulopathies
  - Massive transfusion with coagulation abnormalities
  - Bleeding due to warfarin therapy
20. The following is true concerning autologous donors
- Only two units can be collected prior to surgery
  - Collections can be 5days apart
  - One unit of autologous blood should be given during surgery
  - Unused autologous blood must be discarded
  - Screened and tested blood may be released into the general donor pool
21. The height of wire mesh shelves from the ground in cool rooms should be approximately\_\_\_\_\_?
- 1000mm
  - 1350cm
  - 1350mm
  - 13350 $\mu$ m
  - 1000cm
22. The heat dissipation space between cabinet and wall should be?
- 75mm between cabinet and wall
  - 50mm between cabinet and wall
  - 75mm between two cabinets
  - 50mm between two walls
  - 50mm between refrigerated centrifuge and wall
23. The laboratory request form must contain the following for acceptance by the laboratory staff except?
- Patients name
  - Hospital reference number
  - Donors name
  - Clinicians name and signature
  - Blood component requested

24. The following conditions may necessitate transfusion in neonates and the foetus except?
- Rh Hemolytic disease of the newborn/neonate
  - ABO hemolytic disease of the Newborn/Neonate
  - Neonatal jaundice of any origin
  - Birth weight of 2.0 kilograms without respiratory distress
  - Foetal distress due to rising maternal IgG anti-D antibodies
25. Regular transfusion is encountered during the course of the following conditions except
- Thalassemia
  - Sickle cell disease
  - Pregnancy
  - Aplastic anaemia
  - Acute hereditary Haemophilia
26. The storage of whole blood at 4°C has the following purpose
- Destroy pathogens
  - Maintain oxygen carrying ability of red cells
  - Allow continued growth of any pathogens
  - Reduce the metabolic rate of the Red cells
  - Diminish Haemoglobin concentration
27. The following statements are true concerning fresh frozen plasma (FFP)
- Obtained when plasma is cooled rapidly to below -20°C after separation
  - FFP Is rich in factor III
  - The optimal temperature for storage is -30°C
  - It should normally be used as a volume expander
  - None of the above is true
28. The following storage temperatures and periods correctly apply to the storage of fresh frozen plasma and cryoprecipitates
- Fresh frozen plasma is stored for up to 7 years at -65°C
  - Cryoprecipitate is stored for 3months at 0°C
  - Fresh frozen plasma is stored for 12 months at 39°C
  - Cryoprecipitate is stored only at room temperature
  - FFP is stored at RT for 24 hours
29. The following considerations must be adhered to when assessing blood for reissue except
- Return time
  - Hb levels
  - Haemolysis
  - Temperature
  - Puncture of blood bag
30. The following terms are used in refrigeration except?
- Amplitude of agitation
  - Defrost cycle
  - Forced air cooling
  - Stroke
  - Temperature range

## Section B

31. Discuss the following

- a. Febrile transfusion reactions (10mk)
- b. The major sections of the blood request form (10mks)

32.

- a. Using an illustration describe the process control layout in the blood bank (10mks)
- b. Discuss the indications and contraindications for transfusion of plasma (10mks)