



# 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 SCIENCE II**

**AML 4312 : BLOOD TRANSFUSION**

**END OF SEMESTER EXAMINATION**

**SERIES: APRIL 2016**

**TIME: 2 HOURS**

**DATE:** Pick Date May 2016

## **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

1. The following is false concerning financial management at the blood bank
  - a. Budget should be adequate
  - b. Service charge is not applicable
  - c. Replacement should not be encouraged
  - d. Management of finances helps in patient recruitment
  - e. Financial management helps in planning and supply management
2. Blood should be accepted only from the following
  - a. Low risk and high risk donors
  - b. Safe and healthy donors
  - c. Voluntary donors
  - d. Non-remunerated donors
  - e. Low risk donors

3. Pre-donation information should include information on the following
  - a. Tests carried out on recipient blood
  - b. Modes of TTIs transmission
  - c. Alternative testing sites
  - d. Confidentiality of tests
  - e. Need for honest answers
4. The following is not a criteria for donor selection
  - a. General appearance
  - b. Age
  - c. Weight
  - d. Pulse
  - e. Diet
5. The following standards apply to donation intervals except?
  - a. Whole blood after plasmapheresis 8 weeks
  - b. Whole blood after plasmapheresis 48hrs
  - c. Apheresis after whole blood 90 days
  - d. Between two blood donations 12weeks
  - e. B and C are the exceptions
6. A 12 months deferral may be applied to the following except?
  - a. Recent transfusion
  - b. Vaccination with Hepatitis B immunoglobulin
  - c. History of animal bites
  - d. Jaundice of unknown origin
  - e. History of measles or chicken pox
7. The following is false concerning Anticoagulant solutions
  - a. CPDA-1 is used to store blood for up to 35 days
  - b. 14mls of CPD are required for every 100mls of blood
  - c. 100mls of Additive solutions is added to packed Red cells
  - d. Anticoagulant solutions must be sterile but not pyrogen-free
  - e. About 63mls of CPDA preserves 450mls of blood
8. The following are true of blood group determination in blood banking except?
  - a. Extended Blood group determination is country specific
  - b. In Rh(D) grouping a blend of IgM +IgG should be used
  - c. All Rh(D) Negative should be tested for presence of weak D
  - d. All Rh(D) negative should be tested for presence of C and E antigens
  - e. Serum grouping in ABO should include A, B and O pooled cells
9. Blood with unexpected antibodies should be treated as follows
  - a. Can always be used as whole blood
  - b. Components with cold antibodies can be used at 4<sup>0</sup>C without any problem
  - c. In case of autoantibodies, least reactive blood may be used
  - d. Patient condition and necessity precludes the use of such blood
  - e. When warm alloantibodies are present, use only packed cells

10. The following are types of packed red cells except?
  - a. Frozen deglycerolized red cells
  - b. Leuco-reduced red cells
  - c. Washed red cells
  - d. Leuco-enhanced
  - e. Irradiated red blood cells
11. Platelet concentrates should be handled as follows
  - a. Separation should be within 24 hours of collection
  - b. Separation should be via a validated method
  - c. Minimum concentration of prepared platelets should be  $4.5 \times 10^{10}$  cells/ltr
  - d. pH of storage for platelets should be lower than 6.0
  - e. Platelets should be suspended in not more than 30mls of plasma
12. Plasma separated 5 days to expiry of the unit maybe used for the following
  - a. Distillation
  - b. Cryoprecipitate only
  - c. Source of Factor VIII
  - d. Fractionation only
  - e. Platelet concentrate
13. The following are true concerning cryoprecipitate except?
  - a. Thawing should be in a cold room
  - b. The cryoprecipitate should be stored at  $-30^{\circ}\text{C}$  or lower
  - c. Usage after thawing must be within 6 hours
  - d. Can be used 24h after thawing
  - e. The concentration of fibrinogen should be at least 1.5mg/ml
14. Plasma for preparation of cryoprecipitate should be stored as follows
  - a. Frozen as soon as possible or within 24 hours of collection
  - b. Freezing temperatures at most  $80^{\circ}\text{C}$
  - c. Plasma should be separated at least 5 days after blood collection
  - d. Freezing should be at temperatures above  $-80^{\circ}\text{C}$
  - e. Freezing should be at temperatures below  $-80^{\circ}\text{C}$
15. The following instruction is not to be printed on the transfusion label
  - a. Shake vigorously before use
  - b. Do not use if visibly deteriorated
  - c. Do not dispense without prescription
  - d. Check group of patient and on the label before use
  - e. Do not add any medication to the blood component
16. The following is true concerning serial plasmapheresis
  - a. This is plasmapheresis less than once every 12weeks
  - b. Haemoglobin levels should be  $> 12\text{gms/dl}$
  - c. Haemoglobin levels should be  $< 12\text{gms/dl}$
  - d. A hematocrit of atleast 32% is desirable
  - e. Total serum proteins should be below 6.0gms/dl

17. The following is not a safety feature for blood storage equipment in the blood bank
- Temperature indicator
  - Temperature recorder
  - Alarm system
  - Closed circuit television
  - Alternate power supply
18. Which of the following statements is false concerning transportation of blood and blood products
- Maximum temperature allowable is  $12^{\circ}\text{C}$  for red cell concentrates
  - Platelets can be transported at temperatures not below  $20^{\circ}\text{C}$
  - All frozen components must remain frozen during transport
  - It is not mandatory to monitor temperatures of frozen components during transport
  - Components for use should be thawed to  $37^{\circ}\text{C}$  prior to use
19. The following is true concerning expiration of stored blood
- Blood kept at RT for more than 8 hours should be refrigerated and reused
  - Whole blood in heparin solution expires within 24hours of collection
  - Blood in CPDA-1 expires within 42 days
  - Whole blood in CPD expires within 35 days
  - blood collected in heparin expires within 21days
20. Blood for exchange transfusion should be of the following character
- At least 7 days old
  - 35 days old washed cells can be used
  - Blood in CPD at least 21 days old can be used
  - Blood must be collected in heparin
  - Blood not exceeding 5days is preferred
21. The accommodation in the blood bank should be?
- Smooth
  - Dry
  - Multistoreyed
  - Easily relocatable
  - Dry
22. Blood may be stored in one of two ways. Which of the following is true?
- Only freezers are used for storage of blood
  - Walk in cool rooms cannot be used for blood storage in Kenya
  - Blood products are only stored in fridges
  - Walk in cool rooms maximize space and have higher storage capacity
  - None of the above is true
23. The following blood is not a type collection facility used blood banking
- Mobile vehicles
  - Demountable collection centre
  - Surmountable collection unit
  - Standalone static collection centre
  - Static collection centre in the blood bank

24. The following is false concerning blood processing in the blood bank
- Processing involves collection and refrigeration
  - Component preparation is not part of processing
  - Quarantine storage is located here
  - Labeling before inventory is done here
  - Processing maybe collocated with inventory or testing
25. The following is not a biosafety considerations in the blood bank
- Accessible handwash
  - Cold and hot water in blood handling areas
  - Inaccessible handwash to minimize risk of haemolysis
  - Structural building soundness
  - Observance of international protocols and conventions
26. Clinical manifestations of adverse reactions of blood transfusion are also collectively referred to as?
- Haemolytic disease
  - Transfusion reactions
  - Febrile reactions
  - Eczemic disease
  - Autoimmune disease
27. Clinical symptoms associated with adverse reactions in transfusion result from?
- Destruction of donor serum
  - Destruction of donor cells
  - Destruction of patient cells
  - Destruction of donor plasma
  - None of the above
28. Adverse reactions may most likely occur in neonates than in adults because?
- Immune system of the neonate is well developed
  - Adult immune system is well developed
  - Neonates are protected by maternal IgA
  - Adults have lower immunity
  - None of the above
29. During elution, processes mainly used to recover bound antibodies include the following except?
- Neutralization of Ag-Ab bonds
  - Reversal of Ab-Ag gene activities
  - Reversal of Ab-Ag attraction forces
  - Disruption of Ab-Ag complementarities
  - Addition of water to form hydrophilic bonds
30. Useful recovery of bound antibodies during elution is important in the following processes except?
- Antibody Identification
  - Antigenic stimulation
  - Confirmation of antibody specificity
  - Separation of Antibody mixtures
  - Determination of disease severity in newborns

**Section B: Attempt all questions in this section**

**Question 31**

Describe conditions for donor rejection and deferral

(10mks)

Discuss Post transfusion purpura as an adverse effect of blood transfusion

(10mks)

**Question 32**

Discuss the following

- a. Selecting blood for neonates (5mks )
- b. Donor health assessment questionnaire (8mks )
- c. Donor retention strategies (6mks)