



TECHNICAL UNIVERSITY OF MOMBASA

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.

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 4⁰C 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 4.5×10^{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°C or lower
 - c. Usage after thawing must be within 6 hours
 - d. Can be used 24 hours 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°C
 - c. Plasma should be separated at least 5 days after blood collection
 - d. Freezing should be at temperatures above -80°C
 - e. Freezing should be at temperatures below -80°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 12 weeks
 - 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°C for red cell concentrates
 - Platelets can be transported at temperatures not below 20°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°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)