



TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF MEDICAL SCIENCES

UNIVERSITY EXAMINATION FOR:

DIPLOMA IN MEDICAL LABORATORY SCIENCE

AML 2304 : BLOOD BANKING AND TRANSFUSION PRACTICE

END OF SEMESTER EXAMINATION

SERIES: DECEMBER 2016

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.

Section A

1. The following are specific areas for training of laboratory personnel in the blood bank except
 - a. Antibody screening
 - b. Component preparation
 - c. Issue of blood products
 - d. Tissue banking
2. The following is true concerning organization of blood transfusion services in various countries
 - a. No more than two types of organizations can exist in one country
 - b. All types of organizations can coexist in a country
 - c. Organizations dealing with blood services need not be registered
 - d. Only red crescent organization is allowed in Islamic countries

3. Levels of blood transfusion service include the following except?
 - a. Basic full-range
 - b. Advanced service
 - c. Highly active
 - d. Highly productive
4. The technical director in the blood bank service must have the following
 - a. Post graduate training in medicine
 - b. Post graduate training in transfusion science
 - c. MLS training
 - d. Training in medicine
5. The Donor Health Assessment Questionnaire is divided into the self administered section and the _____ section
 - a. Health care provider assisted
 - b. Donor panel organizer assisted
 - c. Counseling section
 - d. Recovery section
6. Estimation of donor requirements in a country may be done using the following
 - a. Acute beds
 - b. Total hospital beds
 - c. None-fixed percentage
 - d. Fixed percentage
7. Blood may be stored in one of two ways. Which of the following is true?
 - a. Only freezers are used for storage of blood
 - b. Walk in cool rooms cannot be used for blood storage in Kenya
 - c. Blood products are only stored in fridges
 - d. Walk in cool rooms maximize space and have higher storage capacity
8. The following is not an item for disposal consideration in the blood bank
 - a. Blood past use by date
 - b. Contaminated blood samples
 - c. All blood held in quarantine
 - d. Contaminated blood held in quarantine

9. The following is true about quarantined blood
- Freezer room capacity must be 7times the average daily collection
 - All blood must be held in temperature controlled storage
 - Cool rooms must have 2.5times the daily collection capacity
 - Quarantine is done immediately blood enters the collection center
10. Functional considerations for the processing area includes the following except?
- Separate male and female toilets
 - Component preparation ‘
 - Courier waiting area
 - Process managers office
11. The following are carried out in the blood donor laboratory except?
- Infectious disease markers
 - Crossmatch
 - Haemopoietic stem cell processing
 - Cord blood processing and storage
12. 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
13. Adverse reactions are commonly as a result of the following error
- Technical error
 - Storage error
 - Clinicians error
 - Clerical error
14. In ABO incompatibility, the following statements are true
- 90% of incompatible cells are destroyed within 2minutes of infusion
 - No hemoglobin is noticeable in plasma after infusion
 - Blood group O does not lead to incompatibility
 - AB bloods cannot be transfused at any time
15. The half-life of free Haptoglobin is?

- a. 30minutes
 - b. 7minutes
 - c. 5days
 - d. 1 day
16. Visual inspection of post-transfusion plasma will generally detect?
- a. Complement fixation
 - b. Agglutination
 - c. Hemolysins
 - d. Dialysis
17. Extravascular clearance refers to?
- a. Complement fixation
 - b. Involvement of the liver and spleen in Ab-Ag clearance
 - c. Opsonization
 - d. Macrophage activation
18. Hemolytic disease of the new born occurs when?
- a. Increased RBC lifespan
 - b. Decreased RBC life span
 - c. Accelerated Red Cell destruction
 - d. Increased Red Cell Growth
19. The following proteins are present in plasma and normally bind haemoglobin split products
- a. Ahaptoglobin
 - b. Hemopexin
 - c. Albumin
 - d. Prothrombin
20. IgG class of antibodies commonly associated with haemolytic disease include the following except?
- a. IgG 1
 - b. IgG 2
 - c. IgG 3
 - d. IgG 4

21. The reaction of foetal blood cells with antiglobulin during Rh haemolytic disease is?
- Indirect
 - Negative
 - Neutral
 - Direct
22. Severe haemolytic disease is characterized by the following
- Indirect bilirubin levels greater than 4.5mg/dl
 - Cord haemoglobin levels greater than 11gms/dl
 - Cord haemoglobin levels greater than 11gms/dl
 - Direct bilirubin less than 4gms/dl
23. The following is true concerning platelet involvement in severe Haemolytic disease
- Thromboasthenia
 - Thrombocytopenia
 - Thrombocytosis
 - Thromocytothemia
24. Clinically stable patients with severe anaemia require the following
- Mandatory plasma transfusion
 - Mandatory red cell transfusion
 - Clinical observation and stabilization
 - Mandatory volume expansion
25. The following is true concerning therapeutic use of blood
- Blood is used as a cure for hypovolemic shock
 - Respiratory distress is cured by blood transfusion
 - It is important to investigate and treat underlying causes
 - Prevention of underlying causes of anaemia increase the need and use of blood
26. The first treatment for hypotension, shock or acute blood loss should be ?
- Infusion of normal saline
 - Packed red cells
 - Whole blood
 - Colloid solution
27. The following are true concerning transfusion in neonates

- a. A dose of 15ml/kg body weight increases Hb by 3gm/dL
 - b. Preterm babies may not require transfusions
 - c. Blood donation does not increase infectious disease risk
 - d. A dose of 15ml/kg body weight increases Hb by less than 1gm/dL
28. The following are functions of the hospital transfusion committee except?
- a. Ensure staff education on blood use
 - b. Monitor the hospital blood transfusion practices
 - c. Develop national transfusion guidelines
 - d. Monitor and investigate adverse reactions
29. Uncrossmatched blood may be given in the following conditions
- a. After the first 12 units
 - b. Three days after massive transfusion
 - c. In case of emergency
 - d. When donor blood is 'O' Rh D negative
30. Adverse reactions associated with transfer of blood tissue within species mostly affect?
- a. Neonates
 - b. Chimeric twins
 - c. Adults
 - d. None of the above
31. The following are clinical symptoms associated with acute intravascular transfusion reactions
- a. Shock and circulatory collapse
 - b. Haptoglobin depletion
 - c. Anuria and or Oliguria
 - d. Arterio-venous fistula
32. Laboratory investigation of transfusion reactions include the following except?
- a. Repeat ABO and Rh testing
 - b. Repeat crossmatch with implicated units
 - c. Discard all crossmatch tubes
 - d. Retain all samples
33. Anticoagulants used in blood transfusion practice contain the following

- a. Phosphates
 - b. Acidic citrate
 - c. Galactose
 - d. 2,3-diphosphoglycerate
34. After breaking the seal for all blood components,
- a. They should be returned to the Lab and restored
 - b. They should be used within 4hours
 - c. They should be warmed to 37⁰C
 - d. They should be transfused for up to 8hours
35. Plasma derivatives include the following
- a. Red Blood Cells
 - b. Platelets
 - c. Albumin
 - d. Fibrinogen
36. The national blood policy must include the following areas except?
- a. Formulate legislation
 - b. Devise means for delegation of services
 - c. Establish framework for commercialization
 - d. Design laws for prohibition of commercialization
37. The main responsibilities of a donor panel organizer include the following except?
- a. Donor drive publicity
 - b. Reporting of overall status of donor panels
 - c. Maintaining donor records
 - d. Phlebotomy
38. Permanent deferral is recommended in the following except?
- a. Cancer
 - b. Multiple sexual partners
 - c. High risk behavior
 - d. Bleeding disorders
39. The following blood is not a type collection facility used blood banking
- a. Mobile vehicles

- b. Demountable collection centre
 - c. Surmountable collection unit
 - d. Standalone static collection centre
 - e. Static collection centre in the blood bank
40. The following statements are true concerning cryoprecipitates (CP)
- a. CP is obtained when separation was done within 8 hours and cooling within 30minutes of separation
 - b. CP contains up to 100% of the original factor VIII
 - c. Fibrinogen makes up about 30% of CP
 - d. CP is obtained when fresh frozen plasma is thawed at $+1^{\circ}\text{C}$ - $+6^{\circ}\text{C}$

Section B

41. Discuss the following
- a. ABO haemolytic disease of the newborn 10mks
 - b. Blood bank personnel
42. Describe the following transfusion reactions
- a. Haemolytic transfusion reactions 10mks
 - b. Post transfusion purpura 5mks
 - c. Allergic transfusion reactions 5mks
43. Discuss the scope of the following departments in the blood bank
- a. Collection Centre 10mks
 - b. Laboratories 5mks
 - c. Inventory and distribution 5mks