



TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF MEDICAL SCIENCES

UNIVERSITY EXAMINATION FOR:

DIPLOMA IN MEDICAL LABORATORY SCIENCES

AML 2304: BLOOD BANKING AND TRANSFUSION PRACTICE

END OF SEMESTER EXAMINATION

SERIES: AUGUST 2019

TIME: 2 HOURS

DATE: Pick Date Aug 2019

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. Levels of blood transfusion service include the following except?
 - a. Basic full-range
 - b. Advanced service
 - c. Highly active
 - d. Highly productive
2. 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
3. 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
 4. Functional considerations for the processing area includes the following except?
 - a. Separate male and female toilets
 - b. Component preparation ‘
 - c. Courier waiting area
 - d. Process managers office
 5. Adverse reactions may most likely occur in neonates than in adults because?
 - a. Immune system of the neonate is well developed
 - b. Adult immune system is well developed
 - c. Neonates are protected by maternal IgA
 - d. Adults have lower immunity
 6. In ABO incompatibility, the following statements are true
 - a. 90% of incompatible cells are destroyed within 2minutes of infusion
 - b. No hemoglobin is noticeable in plasma after infusion
 - c. Blood group O does not lead to incompatibility
 - d. AB bloods cannot be transfused at any time
 7. Visual inspection of post-transfusion plasma will generally detect?
 - a. Complement fixation
 - b. Agglutination
 - c. Hemolysins
 - d. Dialysis
 8. Extravascular clearance refers to?
 - a. Complement fixation
 - b. Involvement of the liver and spleen in Ab-Ag clearance
 - c. Opsonization
 - d. Macrophage activation

9. IgG class of antibodies commonly associated with haemolytic disease include the following except?
- IgG 1
 - IgG 2
 - IgG 3
 - IgG 4
10. 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
11. The following is true concerning platelet involvement in severe Haemolytic disease
- Thromboasthenia
 - Thrombocytopenia
 - Thrombocytosis
 - Thromocytothemia
12. 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
13. The following are true concerning transfusion in neonates
- A dose of 15ml/kg body weight increases Hb by 3gm/dL
 - Preterm babies may not require transfusions
 - Blood donation does not increase infectious disease risk
 - A dose of 15ml/kg body weight increases Hb by less than 1gm/dL
14. Uncrossmatched blood may be given in the following conditions
- After the first 12 units
 - Three days after massive transfusion
 - In case of emergency
 - When donor blood is 'O' Rh D negative

15. Adverse reactions associated with transfer of blood tissue within species mostly affect?
- Neonates
 - Chimeric twins
 - Adults
 - None of the above
16. Laboratory investigation of transfusion reactions include the following except?
- Repeat ABO and Rh testing
 - Repeat crossmatch with implicated units
 - Discard all crossmatch tubes
 - Retain all samples
17. After breaking the seal for all blood components,
- They should be returned to the Lab and restored
 - They should be used within 4hours
 - They should be warmed to 37⁰C
 - They should be transfused for up to 8hours
18. The national blood policy must include the following areas except?
- Formulate legislation
 - Devise means for delegation of services
 - Establish framework for commercialization
 - Design laws for prohibition of commercialization
19. Permanent deferral is recommended in the following except?
- Cancer
 - Multiple sexual partners
 - High risk behavior
 - Debilitating disease
20. The following statements are true concerning cryoprecipitates (CP)
- CP is obtained when separation was done within 8 hours and cooling within 30minutes of separation
 - CP contains up to 100% of the original factor VIII
 - Fibrinogen makes up about 30% of CP
 - CP is obtained when fresh frozen plasma is thawed at +1⁰C - +6⁰C

21. The following is true concerning the Kenya National Blood Transfusion Organization model
- It is a hospital based system
 - It is a rigid centralized system
 - It is a mixed system
 - None of the above applies
22. Full automation and stem cell banking is found in the following level of service
- Advanced only
 - Sophisticated
 - Highly productive
 - Basic full range
23. Incentives given to donors include the following except
- Inscribed plaques
 - Letters of acknowledgement
 - Currency
 - Badges
24. Normally blood flow in the centre should be?
- Multidirectional
 - Unidirectional
 - Two-way
 - Unstructured
25. The following is not part of the collection centre layout
- Interview area
 - Donor lounge
 - Donation area
 - Loading dock
26. What is the main purpose of partitioning of work flow areas in the blood bank
- Keep workers apart
 - Effectively separate tested and untested blood
 - Maintain donor secrecy and integrity
 - Keep unwanted persons away from the laboratory

27. Normally, split Heme liberated into the plasma will be bound by?
- Haptoglobin
 - Myoglobin
 - Hemopexin
 - Methaemoglobin
28. The following tests are useful in detection of Haptoglobin depletion
- Schumms test
 - Mancini's radial immune diffusion assay
 - Serum Iron
 - Serum Ferritin
29. During transfusion reaction the following are characteristics attributable to the leucocytes
- Erythrophagocytosis
 - Erythroblastosis
 - Decreased degranulation
 - Thrombocytosis
30. During ABO haemolytic disease, maternal blood group is
- Invariably O
 - Variable but predominantly O
 - AB or O
 - A, AB and B
31. The titre for anti-D in (mothers) at which sensitization is likely to occur is?
- 2
 - 4
 - 8
 - 16
32. The following is true concerning the transfusion of blood
- Transfusion is a substitute for plasma
 - Transfusion must be based solely on saving life
 - All hypoxic patients need a transfusion
 - None of the above

33. PRBCs are indicated for the following
- Hypoxia due to reduced red cell volume
 - Hypoxia due to inadequate red cell mass
 - A decreased blood volume
 - Coagulation factor deficiency
34. The following is false concerning considerations for paediatric transfusions
- Hb less than 4gms/dL to be transfused
 - Transfusion recommended for Hb less than 5gms/dL
 - In Hb greater than 5gms/dL consider transfusion in severe burns
 - Most surgeries need transfusion in congenital anaemias
35. The following blood samples must be obtained to accompany requests for blood to the laboratory
- Patients' blood
 - Donor blood
 - Anticoagulated blood
 - None of the above
36. The following are features of compatibility labels except?
- Use of indelible ink
 - Clear and easy to read
 - Hard to interpret
 - Made of adhesive labels
37. When there is severe depletion of Haptoglobin, haemoglobin may bind to
- Macrophages
 - Red Blood Cells
 - Albumin
 - Granulocytes
38. During air travel, blood is stored in pressurized cabins due to?
- Leakage prevention
 - Prevent it from freezing
 - Uphold its dignity
 - Prevent contamination

39. The following are considerations when developing a national blood transfusion service
- It should be based on current scientific and practical principles
 - Sophisticated equipment must be used in all countries
 - Accurate cost efficient use of national resources
 - Ensure technical expertise is available locally for sophisticated equipment
40. Considerations for neonatal transfusion include the following except?
- Acute blood loss >10% volume
 - Haemoglobin < 7gms/dL
 - Hb less than 8gms/dL with decreased vigour
 - Hb 12gms/dl with mild respiratory distress
 - Hb<12gms/dL without weight gain in 7 days

Section B

- 41.
- List down 6 conditions associated with Acute adverse events 6 marks
 - Outline the scope of static collection centers 6 marks
 - Describe the schedule of spaces when installing fridges in the blood bank 8 marks
42. Discuss ABO haemolytic disease of the newborn 20marks
43. Discuss storage conditions and duration of storage for the following blood and blood products
- Red blood cells 5marks
 - Platelets 5marks
 - Plasma 10marks