



TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF MEDICAL SCIENCES

UNIVERSITY EXAMINATION FOR:

DIPLOMA IN MEDICAL LABORATORY SCIENCES

AML 2303 : HAEMATOLOGY III

SPECIAL/ SUPPLIMENTARY EXAMINATIONS

SERIES: SEPTEMBER 2018

TIME: 2 HOURS

DATE: Pick Date Sep 2018

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, calculator, examination pass and student ID

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

Circle the correct answer in section A.

1. At injury the first reaction towards achievement of haemostasis is?
 - a. Platelet aggregation
 - b. Formation of fib2rin
 - c. Vessel constriction
 - d. Contact activation
2. The condition in which platelets are defective functionally is referred to as?
 - a. Thromboasthenia
 - b. Thrombocytosis
 - c. Thrombocytothemia
 - d. Thrombocytopenia

3. Paracoagulation may result from pathological states where?
 - a. FDPs complex with fibrin monomers
 - b. Soluble precipitates are formed by FDP and calcium ions
 - c. Fibrin is polymerized
 - d. Thrombin activity is impaired
4. Normal time in the thromoplastin time (APTT) method is?
 - a. 5 – 11minutes
 - b. 20 – 40seconds
 - c. 30 – 60 minutes
 - d. 5 – 11 seconds
5. The citrate used in coagulation studies is normally at a ratio of
 - a. 1part blood – 4parts citrate
 - b. 1part blood – 9parts citrate
 - c. 1part citrate – 4parts blood
 - d. 1part citrate – 9parts blood
6. Platelet granules contain the following except?
 - a. Actin and myosin
 - b. Alpha granules
 - c. Beta granules
 - d. Delta granules
7. The following statement is false concerning thrombin generation
 - a. Extrinsic pathways generates smaller amounts than the intrinsic
 - b. Intrinsic system generates smaller amounts of thrombin
 - c. The intrinsic pathway is slower in thrombin production
 - d. The extrinsic system generates thrombin rapidly
8. The following cytochemical tests maybe positive for the subgroup M7 in acute non-lymphoid leukemia
 - a. Sudan black B
 - b. Peroxidase
 - c. Periodic acid Schiff
 - d. Acid phosphatase
9. The following statements are true of acute leukemias
 - a. There are fewer than 30% blasts in circulation
 - b. There are more than 50% blasts in circulation
 - c. Blasts consist only 10% - 30% of cells in the marrow
 - d. Acute leukemias are classified into M0-M7 and L1-L3 by French American British group.

10. Amplification of the coagulation cascade by thrombin is by its action on the following except?
- Conversion of fibrin from fibrinogen
 - FXII activation
 - Enhancing FVIII activity
 - Enhancing FXII activity
11. Mechanisms associated with malignant myeloproliferative disorders include the following
- Microorganism tRNA
 - Gene inversion
 - Chromosomal replication
 - None of the above
12. The condition in which platelets are defective quantitatively is referred to as?
- Thromboasthenia
 - Thrombocytosis
 - Thrombosis
 - None of the above
13. Factors I, X, VIII and XIII belong to the?
- Fibrinogen group
 - Prothrombin group
 - Contact group
 - Kininogen group
14. In evaluation of disorders of haemostasis, the following is not factored
- Family history
 - Skin colour
 - Patient history
 - Clinical findings
15. The following platelet factor is a precursor to thromboxane A₂
- PF3
 - PF4
 - Arachidonic acid
 - Anti heparin
16. The following platelet aggregation states are irreversible
- Primary
 - Secondary
 - Tertiary
 - Vascular

17. Vitamin K dependent factors include the following except?
- Factor II
 - Protein C
 - Stuart Prower
 - Factor I
18. The following is classification of leukemia based on cell maturity
- Chronic
 - Dysplastic
 - Myelogenous
 - Myelofibrosis
19. In coagulation, Vitamin K dependent factors require the following for activation
- Magnesium
 - Calcium
 - Protein S
 - Cobalt
20. FXIIa also activates the following fibrinolytic factor
- Fibrin
 - Plasminogen
 - Kininogen
 - Kallikrein
21. The following is true when there are circulating anticoagulants
- APTT is Normal
 - PT is Normal
 - Both APTT and PT are abnormal
 - PT is Normal while APTT is abnormal
22. Thrombocytosis may be found in the following conditions
- Myelodysplastic syndromes
 - Iron deficiency anaemia
 - Lymphoma
 - Myelofibrosis
23. Vascular damage purpura resulting from immune complex deposition is known as?
- Henoch-Schonlein purpura
 - Telangiectasia
 - Thrombotic thrombocytopenic purpura
 - Organ ischemia and renal failure purpura
24. The following statements are true concerning myelofibrosis
- Result from polycythemia
 - Marrow hypoplasia
 - Marrow hyperplasia
 - There is no hepatomegaly

25. The functions of fibrinolysis include the following
- Restriction of fibrin formation
 - Clot formation
 - Redirection of clot formation
 - Vessel blockage
26. Which of the following is the initial vascular response to injury _
- Vasodilation
 - Vasoconstriction
 - Diversion of lymph flow
 - Reduced blood flow to injury site
27. Haemostatic function of platelets include the following except?
- Maintain vascular integrity
 - Precipitate secondary haemolysis
 - Fill endothelial gaps
 - Cofactor during activation of intrinsic factors
28. The following are characteristics of the Bernard-Soulier syndrome except
- There is increased skin and mucous membrane bleeding
 - Normal platelet count
 - Dwarf platelets in the peripheral blood film
 - Giant platelets in the peripheral blood film
29. The zymogen that is a precursor to thrombin is known as?
- Thromboplastin
 - Proconvertin
 - Fibrinogen
 - Prothrombin
30. What is the assigned numeral for thromboplastin factor?
- XII
 - III
 - IV
 - X
31. The following is not a considered an aetiological factor associated with leukemia
- Chemical agents
 - Chemotherapy
 - Bacteria
 - Immunologic deficiencies
32. Secondary haemostasis involves primarily the following
- Blood vessels
 - Zymogens
 - Coagulation factors
 - Red Blood Cells

33. The following Myeloproliferative conditions is as a result of ionizing radiation
- Polycythemia
 - Chronic Myeloid Leukemia
 - Essential Thrombocytopenia
 - Thrombophilia
34. The following are processes that aid in the amplification of coagulation by thrombin except?
- Activation of factor XIII
 - Activation of factor XII
 - Enhancement of factor V activity
 - Aggregation of platelets
35. Specific tests for fibrinolysis assays include the following except?
- D – Dimer assay
 - Plasminogen assay
 - Whole blood clot lysis time
 - Alpha₂ – antiplasmin
36. The following procedure is not necessary when the quality control results are outside the expected range
- Proper mixture and warmth of the sample
 - Correct entry of identification information
 - Ensure control material is not contaminated
 - Rerun of all previous samples
37. WHO criteria for classification of hematologic neoplasms employs the following except?
- Cytochemistry
 - Genetic features
 - Clinical features
 - Immunophenotyping
38. Contact activation leads to the following
- Cleavage of plasma thromboplastin antecedent
 - Activation of the Hageman factor
 - Activation of high molecular weight kinninogen
 - Cleavage of kallikrein
39. The following is classification of leukemia based on cell maturity
- Chronic
 - Dysplastic
 - Myelogenous
 - Myelofibrosis

40. In coagulation, Vitamin K dependent factors require the following for activation
- a. Magnesium
 - b. Calcium
 - c. Protein S
 - d. Cobalt

Section B

1. Describe the following
 - A. Intrinsic pathway (10mks)
 - B. Lee and white clotting time test (10mks)
2. Discuss the following
 - A. Bone marrow staining (10mks)
 - B. Platelet granules (10mks)
3. Define the following terms giving examples (4mks)
 - a. Thrombosis
 - b. Leukaemia
 - c. Erythrocytosis
 - d. Intrinsic pathway
 - e. Thrombin time