



TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF MEDICAL SCIENCES

UNIVERSITY EXAMINATION FOR:

DIPLOMA IN MEDICAL LABORATORY SCIENCE

AML 2303 : HAEMATOLOGY III

END OF SEMESTER EXAMINATION

SERIES: DECEMBER 2016

TIME: 2 HOURS

DATE: Pick Date Dec 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. Secondary platelet aggregation is dependent on the following factors
 - a. Thrombomodulin
 - b. Thromboplastin
 - c. Thromboxane A₂
 - d. Prothrombin
2. Tests for vascular system include the following
 - a. Prothrombin time
 - b. Partial thromboplastin time
 - c. Thrombin time
 - d. Hess's test
3. The following tests are related to the Prothrombin time test
 - a. Thromboplastin time
 - b. Thromboplastin ratio
 - c. Prothrombin index
 - d. Prothrombin activator

4. Contact activation leads to the following
 - a. Cleavage of plasma thromboplastin antecedent
 - b. Activation of the Hageman factor
 - c. Activation of high molecular weight kinninogen
 - d. Cleavage of kallikrein
5. At injury the following factors attract platelets to the site of injury
 - a. Von Willebrands factors
 - b. Thromboxane A₂
 - c. Thrombomodulin
 - d. Anti-hemophilic factor B
6. Factors I, X, VIII and XIII belong to the?
 - a. Fibrinogen group
 - b. Prothrombin group
 - c. Contact group
 - d. Kinninogen group
7. Specific tests for fibrinolysis assays include the following except?
 - a. D – Dimer assay
 - b. Plasminogen assay
 - c. Whole blood clot lysis time
 - d. Alpha₂ – antiplasmin
8. The following procedure is not necessary when the quality control results are outside the expected range
 - a. Proper mixture and warmth of the sample
 - b. Correct entry of identification information
 - c. Ensure control material is not contaminated
 - d. Rerun of all previous samples
9. WHO criteria for classification of hematologic neoplasms employs the following except?
 - a. Cytochemistry
 - b. Genetic features
 - c. Clinical features
 - d. Immunophenotyping
10. The translocation of chromosome 9 and 22 has been found to be highly specific for?
 - a. CML
 - b. ALL
 - c. CLL
 - d. Burkitt's
11. A dry tap in bone marrow collection means that?
 - a. No marrow is collected
 - b. Marrow is present
 - c. The marrow is cellular
 - d. All of the above

12. The end product of coagulation cascade results in the following
 - a. Fibrinogen converted to fibrin
 - b. Stable fibrin
 - c. Vascular constriction
 - d. Primary platelet plug
13. The following is not a haemostatic function of the vascular system
 - a. Formation of the platelet plug
 - b. Diversion of blood flow
 - c. Initiation of coagulation activity
 - d. Vasoconstriction
14. The following are processes that aid in the amplification of coagulation by thrombin except?
 - a. Activation of factor XIII
 - b. Activation of factor XII
 - c. Enhancement of factor V activity
 - d. Aggregation of platelets
15. Laboratory findings in anaemias of endocrine disorders include the following
 - a. Macrocytosis with normal Folate
 - b. Microcytosis with normal B12 and Folate
 - c. Decreased 2,3-DPG
 - d. Hypergonadism
16. Mechanisms that may lead to malignancy and indeed malignant myeloproliferative disorders include the following except
 - a. Viral DNA insertion
 - b. Gene segment replication
 - c. Chromosomal segment translocation
 - d. Structural mutation that is repairable
17. Pseudo-Huët-Pelger bodies and Auer rods depict the following
 - a. Confirms that a leukemia is lymphocytic and acute
 - b. Confirms that a leukemia is lymphocytic and acute
 - c. May not signify type of leukemia
 - d. Helps in sub-classifying lymphoid leukemias
18. The following Myeloproliferative conditions is as a result of ionizing radiation
 - a. Polycythemia
 - b. Chronic Myeloid Leukemia
 - c. Essential Thrombocytopenia
 - d. Thrombophilia

19. The initial response to injury by blood vessels is referred to as
- Platelet response
 - Vascular response
 - Primary response
 - Secondary response
20. The following are structures beneath the surface of the vascular endothelium except?
- Subendothelium
 - Collagen
 - Connective tissue cells
 - Submembranous tissue
21. Alpha granules consist of the following specific proteins except
- Platelet derived growth factor
 - Fibrinogen
 - Calcium
 - Von Willebrand factor
22. Secondary haemostasis involves primarily the following
- Blood vessels
 - Zymogens
 - Coagulation factors
 - Red Blood Cells
23. Foods rich in vitamin K include the following except?
- Cereals
 - Cauliflower
 - Egg white
 - Egg Yolk
24. The following is a property of the breached endothelial cell surface
- It is inert to coagulation factors
 - Does not have heparin sulphate
 - It is nonwetttable
 - Expresses von willebrand factor
 - Does not produce endotheum
25. The following is true concerning the components of extrinsic system
- Prostacyclin promotes platelet aggregation
 - ADP inhibits aggregation
 - Thromboplastin degrades fibrin
 - Factor V and proconvertin activate factor X
26. The following are characteristics of the Benard-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

27. The zymogen that is a precursor to thrombin is known as?
- Thromboplastin
 - Proconvertin
 - Fibrinogen
 - Prothrombin
28. What is the assigned numeral for thromboplastin factor?
- XII
 - III
 - IV
 - X
29. The following is not a considered an aetiological factor associated with leukemia
- Chemical agents
 - Chemotherapy
 - Bacteria
 - Immunologic deficiencies
30. The following is not a diagnostic feature of essential thrombocythemia
- Absence of the Philadelphia chromosome
 - Presence of stainable iron in bone marrow aspirates
 - Presence of Philadelphia chromosome
 - Megakaryocytic hyperplasia
31. Myelodysplastic syndromes include the following except
- Refractory anaemia
 - Refractory thrombocytopenia
 - Unclassifiable myeloproliferative disorders
 - Refractory anaemia with excess blasts
32. The following is false concerning the characteristics of leukemia
- Occur in all age groups
 - Affect the bone marrow only
 - They are malignant disorders
 - May also affect the lymphatic system
33. The following is true concerning myeloid tissue except?
- This is normally found in the red bone marrow
 - Is able to perform haemopoiesis
 - Myeloid tissue is also present in the liver
 - Myelocyte is synonymous to myeloid tissue
34. Vitamin K inhibitors include the following except
- Warfarin
 - Dicoumarol
 - Oral anticoagulants
 - Protamine sulfate

35. Prothrombin time is useful in the following
- Intrinsic factor pathway screen
 - Extrinsic factor screen
 - Common pathway screen
 - Specific to Prothrombin assay
36. The following are characteristics of vascular abnormalities except?
- Are only acquired
 - Presence of Petechiae
 - Always normal platelet counts
 - Diagnosis is always specific assay not exclusion
37. The following is a characteristic of myeloproliferative leukemias
- Poor prognosis
 - Poor response to treatment
 - The subtypes are not identifiable
 - Some maybe of myeloid or lymphoid lineage
38. In leukaemia, crises refers to the following during the course of leukaemia
- Presence of immature abnormal cells in the marrow only
 - Absence of abnormal cells in peripheral circulation only
 - Absence or reduction of abnormal cells in marrow and related organs
 - None of the above is true
39. Classification of leukemias now employs the following techniques except?
- Antigen surface markers
 - Cytochemistry
 - Disease progression
 - Staining
40. Primary platelet aggregation is dependent on the following factor
- Thrombomodulin
 - Thromboxane A₂
 - Von Willebrands factor
 - Prothrombin

Section B

Section B

- Describe the following
 - Chronic myeloid leukemia (10mks)
 - Thrombin time (10mks)

2. Discuss the following

A. Preparation of and staining of bone marrow smears (10mks)

B. Platelets involvement in coagulation (10mks)

3.

a. Discuss Sickle cell anaemia (10mks)

b. Describe four types of cytological stains used in leukemia assays (10mks)