TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF MEDICAL SCIENCES

UNIVERSITY EXAMINATION FOR:

BACHELOR OF MEDICAL LABORATORY SCIENCE

AML 4306 : BLOOD TRANSFUSION I

END OF SEMESTER EXAMINATION

SERIES: DECEMBER 2016

TIME: 2 HOURS

DATE: Pick Date Select Month Pick Year

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 Rh genes are mapped on the following chromosome
   a. 1
   b. 2
   c. 9
   d. 11
   e. 22
2. The gene responsible for formation of the Rh antigens is referred to as?
   a. RHCE
   b. RHD
   c. RHAG
   d. H
   e. ABR-RH
3. The following is not a possible haplotype in the inheritance of Rh blood types
   a. CDe
   b. CDd
   c. CdE
   d. Cde
   e. CDE

4. The following statements are true concerning weak and partial D except
    a. Weak D is a qualitative defect
    b. Partial D is a quantitative defect
    c. Weak D is a quantitative defect
    d. Partial D is also known as D^u
    e. Weak D results from a positional effect
5. Identify the correct Weiner genotype given the Rosenfield numerical notation (1, 2, -3, -4, 5)
    a. R^1r
    b. R^1R^2
    c. rr
    d. R^1R^2
    e. R^1r^y
6. Conditions that may necessitate the recovery of bound antibodies include the following?
    a. Hemolytic disease of the newborn/foetus
    b. Transfusion reactions
    c. Graft versus host disease
    d. Acquired hemolytic disease
    e. All of the above
7. During elution, the final wash supernatant is used as?
    a. A positive control
    b. As a negative control
    c. As a negative and positive control
    d. As the test medium
    e. Autocontrol
8. Clinical adverse effects associated with the lack of Rh antigens include the following except?
    a. Haemolysis
    b. Stomatocytosis
    c. Spherocytosis
    d. Reduced osmotic fragility
    e. Normal active transport across RBC membrane
9. The expression of a coding nucleotide sequence with two or more variants differing by only a point mutation is referred to as?
    a. Genotype
    b. Phenotype
    c. Allele
    d. Missense
    e. Phenotype
10. The following is true concerning the ABO antigens
    a. They are direct gene products
    b. They are glycosyltransferases
    c. They are not direct gene products
    d. None is carbohydrate
    e. All are proteins

11. The substance formed from the N-acetyl-D-galactosaminyl transferase is of the following character
    a. Lipid
    b. Glycolipid
    c. Glycophorins
    d. Glycoprotein
    e. Glycolipid
12. The genes for antibody production are located on the following chromosomes
    a. 14, 2 and 9
    b. 14, 2 and 6
    c. 22, 14 and 2
    d. 22, 14 and 9
    e. 22, 2 and 6
13. The surface charge exerted by the RBC is known as_____?
    a. Ionic cloud
    b. Surface of shear
    c. Surface shear
    d. Zeta potential
    e. Dielectric constant
14. The following statements are true concerning autoantibodies except?
    a. Antibody reacting with an individual's own red cells antigen
    b. Most auto antibodies are non-specific
    c. Autoantibodies may cause polyagglutination
    d. There are no cold harmless autoantibodies
    e. All autoantibodies are resident in the subjects serum
15. Two parents of phenotype A_1 may give rise to the following offspring except?
    a. A_1A_1
    b. BB
    c. OO
    d. A_2A_2
    e. A_1O
16. The following are attributes of blood as recorded by ancient generations
    a. Blood is the life of the flesh
    b. The soul contains the blood
    c. Blood and soul are alive
    d. The soul and flesh depend on blood
    e. Blood is a mystical creature
17. In 1492 it was alleged that pope innocent VIII was given blood from?
    a. Three 15-year old boys
    b. Two 10-year old boys
    c. Three 10-year old boys
    d. Three 10-year old girls
    e. Two 10-year old girls

18. The first animal transfusion was performed by Lower on the following animal
    a. Goats
    b. Cats
    c. Dogs
    d. Calves
    e. Monkeys
19. Transfusion by the syringe was introduced by?
    a. Wahrendorff
    b. Blundell
    c. Harvey
    d. Landsteiner
    e. Galen
20. Dr. John Henry Leacock of Barbados proved that?
    a. Blood could be transfused inter-species
    b. Blood could not be transfused intra-species
    c. Blood could be transfused within species
    d. Transfusion could only be done in extreme haemorrhage
    e. Blood was safer when transfused within species
21. Dr. Reuben Ottenberg was able to establish the following?
    a. Transfusion reactions
    b. Transfusion overload
    c. Transfusion induced infections
    d. Transfusion transmissible infections
    e. Transfusion iron overload
22. The Antiglobulin test was discovered in 1908 by?
    a. Dr. Robin coombs
    b. Dr. Carlo Moreschi
    c. Dr. Rob Race
    d. Dr. Arthur Mourant
    e. Carl Landsteiner
23. Antigenic determinants may function in the following ways
    a. As antigens only
    b. As antibodies only
    c. As transporters and channels
    d. As vitamins only
    e. None of the above
24. In order to keep with the spirit of blood donation, it is important that donors _ _ _
    a. Are coerced into giving out blood
    b. Give blood freely without undue stress
    c. Are remunerated after giving blood
    d. Give blood only to close relatives
    e. Must be spouses

25. The types of embolism encountered during blood donation include?
    a. Water embolism
    b. Platelet embolism
    c. Vessel embolism
    d. Needle stylette embolism
    e. Colon embolism
26. Relief during tetany may be achieved by?
    a. 10% oxygen
    b. 10% carbon dioxide
    c. 10% Nitrogen
    d. Re-breathing in a plastic bag
    e. None of the above
27. The following are blood group systems except
    a. Xg
    b. Kell
    c. Bombay
    d. MNSs
    e. Junior
28. The following reagents are employed in Rh D-typing except?
    a. Enzymes
    b. Anti-B serum
    c. Antihuman globulin
    d. Albumin
    e. LISS
29. The following procedures are done during an extreme emergency transfusion except?
    a. Haemolysin free "O" Rh D negative blood is given
    b. The technician signs the request
    c. The pack is not labeled "UNCROSSMATCHED BLOOD"
    d. Rapid ABO and Rh blood grouping is done
    e. An immediate spin result is used to release blood for transfusion
30. The saline used in the crossmatch technique should be of the following strength
    a. 0.85milligms/dl
    b. 8.5grms/dl
    c. 0.85gms/dl
    d. 0.96gms/dl
    e. 0.80gms/dL

Section B

Question 31

Using the chart below: Identify the antibody present. Show your steps and and identification pattern

Cell Number	D	C	E	c	e	f	M	N	S	s	P1	Lea	Leb	K	k	Fya	Fyb	Jka	Jkb	IS	37	AHG
1	0	+	0	+	+	+	+	+	+	+	+	+	0	0	+	+	+	+	0	0	3+	0
2	+	+	0	0	+	0	+	+	0	+	+	0	+	0	+	0	+	+	0	0	0	0
3	+	+	0	0	+	0	+	0	+	+	+	0	+	+	+	+	+	0	+	0	0	0
4	+	0	+	+	0	+	+	+	0	+	+	+	0	0	+	0	+	+	+	0	3+	0
5	0	0	+	0	+	+	0	+	+	0	+	0	+	0	+	0	+	+	+	0	0	0
6	0	0	0	0	+	+	+	0	0	+	+	0	+	0	+	+	0	+	+	0	0	0
7	0	0	0	+	+	+	+	+	+	+	+	+	0	0	+	0	+	0	+	0	3+	0
8	0	0	0	0	+	+	+	+	0	+	+	0	0	+	+	0	0	+	0	0	0	0
9	0	0	0	0	+	+	+	0	+	0	0	+	0	0	+	0	+	+	+	0	0	0
10	0	0	0	+	+	+	+	0	0	+	0	0	+	0	+	+	0	+	0	0	3+	0
11	0	0	0	+	+	+	0	+	0	+	0	0	+	0	+	+	+	+	+	0	3+	0
Patient Typing																				0	0	0
INTERPRETATION:																						

Question 32

a. Describe Rh null 5mks
b. Outline the procedure for specificity 5mks
c. Discuss false agglutination in blood group serology 10mks