

TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF APPLIED AND HEALTH SCIENCES
DEPARTMENT OF MEDICAL SCIENCES
UNIVERSITY EXAMINATION FOR:
DEGREE
AML 4407 : FORENSIC SCIENCE
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, 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. All of the following are ways to improve our observational skills **except**
 - a) be sure to look at the entire area, not just the body, weapons, or signs of break-in
 - b) observe everything no matter how big or small
 - c) when collecting evidence, record only those things that you are sure are important
 - d) write down and photograph everything you find
 - e) collect as much evidence as possible
- 2 . The forensic scientist has many duties. Which of these is **not** a job for a forensic scientist?
 - a) give evidence in court
 - b) question a suspect
 - c) sign a Cause of Death document
 - d) search for evidence

 - e) analyse the samples
3. Locard's exchange principle implies all of the following except
 - a) Fibers can be transferred from one person to another.

- b) Blood spatter can be used to identify blood type.
 - c) Cat hair can be transferred to your pants.
 - d) Soil samples can be carried from the yard into your home.
 - e) pollen grains can be transferred to your sweater.
4. Transfer evidence can include all of the following except
- a) the victim's own blood gushing from a wound
 - b) hair that was transferred to a hairbrush
 - c) the blood of the victim found on a suspect
 - d) a footprint
 - e) finger printgs on a glass
5. The reason it is important to separate the witnesses at the crime scene is to
- a) prevent contamination of the evidence
 - b) prevent fighting among the witnesses
 - c) prevent the witnesses from talking to each other
 - d) protect them from the perpetrator
 - e) protect them from the victim
6. Correct collection of evidence requires which of the following?
- a) documenting the location where the evidence was found
 - b) correct packaging of evidence
 - c) maintaining proper chain of custody
 - d) labelling all the samples
 - e) all of the above
7. A crime-scene sketch should include all of the following except
- a) a scale of distance
 - b) date and location of the crime scene
 - c) a north heading on the diagram
 - d) the type of search pattern used to collect the evidence
 - e) case number
8. The hair shaft is composed of the cuticle, cortex, and
- a) medulla
 - b) root
 - c) crown
 - d) granules
 - e) chips
9. Natural fibers can be harvested from
- a) plants and animals
 - b) only from plants
 - c) only from animals
 - d) plants, animals, and minerals
 - e) fiber optics
10. The shiny nature of silk can be related to
- a) its hollow core
 - b) its ability to refract light
 - c) its smooth, round fibers
 - d) mucus secretions from the silkworm

- e) its straight strands
11. What characteristics of cotton make it a great source of fiber for clothing?
- a) It is very easy to grow.
 - b) It is resistant to staining.
 - c) The fibers are easily woven and dyed.
 - d) The fibers are extremely long.
 - e) its resistant to pests
12. Mineral fibers such as asbestos are very durable. These fibers are used in all of the following **except**
- a) rope
 - b) shingles
 - c) floor tiles
 - d) brake liners
 - e) roofing
13. Fingerprints that are actual indentations left in some soft material such as clay or putty are referred to as
- a) plastic fingerprints
 - b) patent fingerprints
 - c) latent fingerprints
 - d) indented fingerprints
 - e) left fingerprints
14. DNA restriction enzymes
- a) are used to repair DNA
 - b) are involved in DNA synthesis
 - c) prevent DNA from being amplified
 - d) cut DNA into fragments of different lengths
 - e) are used to recombine DNA
15. Blood types are determined by the presence of protein located on
- a) all of the blood cells
 - b) only the white blood cells
 - c) only on the T-helper cells
 - d) only on the red blood cells
 - e) only on the platelets
16. Blood proteins that determine blood types are found on the following except
- a) on the surface of the cell membrane
 - b) inside of the cytoplasm
 - c) both on the cell membrane and inside of the cytoplasm
 - d) found in the skin
 - e) inside the nucleus of the cell
17. If a person has type A– blood, then they have
- a) only the A protein
 - b) both the A and the Rh proteins
 - c) all three blood proteins
 - d) It is impossible to tell what proteins they have
 - e) only the Rhesus protein
18. If a person has type O+ blood, then they have

- a) the A and the B protein, but lack the Rh protein
 - b) an O protein but not the Rh protein
 - c) none of the ABO nor the Rh proteins
 - d) the Rh protein but not the A or the B proteins
 - e) the A, B and Rhesus protein
19. To determine one's blood type, what is added to the slide?
- a) blood and antibodies
 - b) only the antibodies
 - c) luminol
 - d) blood and antigens
 - e) plasma and serum
20. The major limitation of crime scene reconstruction is that the evidence
- a) Can overwhelm the crime laboratory
 - b) Usually provides less information than needed
 - c) May have been staged
 - d) Supports only one sequence of events
 - e) supports only the victims narration
21. Why do forensic photographers often use scales in their photography?
- a) they provide information about the relative size of the object
 - b) they are not useful in court room situations
 - c) they provide complete information
 - d) it is a requirement in photography
 - e) they answer all the questions
22. An examination of the development stages of the insect present on the decomposing corpse may yield valuable information about
- a. the circumstances surrounding the death
 - b. the post-mortem interval
 - c) the identification of the deceased
 - d) the age of the deceased
 - e) the sex of the deceased
23. The examination of physical evidence by a forensic scientist is usually undertaken for
- a) Proving a suspect's innocence in a courtroom
 - b) Proving a suspect's guilty in a courtroom
 - c) Identification or comparison purpose
 - d) Assisting law enforcement in the apprehension of an offender
 - e) For record purposes only
24. The correct method of preserving clothes stained with vomitus in poisoning case is
- a) Air dried in shade and preserved
 - b) Sun dried and preserved
 - c) Preserved with sodium chloride solution
 - d) Immediately packed in a polythene bag
 - e) Preserved in a bucket of clean water
25. Kastle-Meyer presumptive test for blood is also known as _____ test.
- a) Benzidine
 - b) Phenolphthalein
 - c) o-Tolidine

- d) TMB
 - e) Beta
26. Which one is not neurosis in the following list ?
- a) Anxiety
 - b) Schizophrenia
 - c) Hypochondriacal
 - d) Phobia
 - e) Amnesia
27. Picric Acid test of urine is performed to detect
- a) Albumin b
 - b) Creatinine
 - c) Uric acid
 - d) Chlorine
 - e) Glucose
28. Which of the following techniques can be used in analysis of fibres ?
- a) Optical microscopy
 - b) Pyrolysis gas chromatography
 - c) Fourier Transform Infrared Spectroscopy (FTIR)
 - d) Fluorescence microscopy
 - e) All of the above
29. Preliminary observations of the pooling of blood at the lowest part of the body caused by gravity is
- a) Rigor mortis
 - b) Livor mortis
 - c) Algor mortis
 - d) Putrefaction
 - e) Hypostasis
30. The following are causes of death in drowning. Except
- a) Gagging
 - b) Asphyxia
 - c) Ventricular fibrillation
 - d) Laryngeal spasm
 - e) Hanging

SECTION B

31. a. Explain the similarities and differences of the following terms: rigor mortis and livor mortis (10 marks)
- b. Distinguish between autolysis and decomposition (10 marks)
32. a. Briefly explain why hair is considered class evidence. (10 marks)
- b. Discuss the difference between laceration and incised wounds and mention their significance in forensic science (10 marks)