



TECHNICAL UNIVERSITY OF MOMBASA
Faculty of Applied & Health Sciences

DEPARTMENT OF MEDICAL SCIENCES

UNIVERSITY EXAMINATIONS FOR DEGREE IN
BACHELOR OF MEDICAL LABORATORY SCIENCES

AML 4401: EXPERIMENTAL ANIMAL SCIENCE

SUPPLEMENTARY/SPECIAL EXAMINATIONS

SERIES: FEBRUARY 2015

TIME: 2 HOURS

INSTRUCTIONS:

- Answer all questions. No Guess work. Circle the Correct Answer in Section A.
This paper consists of Six printed pages
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SECTION A

1. Which of the following is not a rat species variety?
 - A. Abyssinian type
 - B. Sprague Dawley
 - C. Wistar
 - D. Long Evan
 - E. Rattus rattus

2. _____ are used to replace live animals in impact testing.
 - A. Crash test dummies
 - B. 3T3 cells
 - C. Draize rabbit skin
 - D. None of the above
 - E. All of the above

3. Which of the following is not a reason why insects are reared in research laboratories.
 - A. Food source for other animals
 - B. Catalepsis studies
 - C. Aesthetic reasons
 - D. Ease in culturing
 - E. Study of general physiology

4. Which of the following is untrue relating to heating and ventilation in an animal house?
 - A. Uneven distribution of heat causes hot spots in cages.
 - B. Positive air pressure should be maintained in a clean area.
 - C. Air from outside should not be filtered.
 - D. Dirty areas should have a negative internal pressure
 - E. Dehumidifying the animal house may be necessary.

5. Which of the following does not relate to water bottles in an animal cage?
 - A. Drinking tube should be made of stainless steel.
 - B. Must be suspended at an angle.
 - C. Are hardest water source to maintain for caged.
 - D. Should be placed outside cages.
 - E. Several bottles for each cage.

6. The duties performed by junior staff in the lab are summarized as
 - A. Environmental checks
 - B. Manage experimental animals
 - C. Maintenance of equipment
 - D. Checking food quality
 - E. Watering the animals

7. Which of the following is not an administrative record?
 - A. Breeding record
 - B. A diary of events
 - C. Inventory book
 - D. Personnel records
 - E. Research requests

8. Which of the following is not experimental endpoint when using lab animals in research?
 - A. Euthanising
 - B. Terminating a painful procedure.
 - C. Giving treatment to relieve pain/and or distress
 - D. Restoring a basic requirement
 - E. Anaesthetizing the animal

9. Which of the following is unique in spotting fish in a tank?
- A. Use of clips
 - B. Natural patterns
 - C. Tank isolation
 - D. Painting
 - E. Punch coding
10. Which of the following animal is not stained as a means of identification?
- A. Mouse
 - B. Rat
 - C. Rabbit
 - D. Guinea pig
 - E. Ferret
11. Which of the following equipment gives records similar to thermograph
- A. Hygrometre
 - B. Clinical thermometer
 - C. Relative humidity
 - D. Bull nose thermometer
 - E. Maximum minimum thermometer
12. Which group of insects are unlikely to transmit diseases but cause allergic reactions
- A. Hemiptera
 - B. Mallophagen
 - C. Diptera
 - D. Siphonaptera
 - E. Anoplura
13. Which of the following methods of pest eradication is adequate for heat and moisture sensitive materials
- A. Gamma radiation
 - B. Hot air
 - C. Ethylene oxide gas
 - D. Phenolic compounds
 - E. Flaming
14. Which chemical method is best suited for hardware and floors in pest control
- A. Ultra violet radiation
 - B. Phenolic compounds in solution
 - C. Hot air
 - D. Ethylene oxide gas
 - E. Scrubbing with soapy water

15. What does sterilization do?
- A. Kill all living organisms
 - B. Destroying pathogenic organisms
 - C. Inhibit growth of disease causing organisms
 - D. Reduces sepsis
 - E. Removes offensive wastes
16. Which cleaning method is not appropriate for beddings for animals
- A. Scrapping social wastes
 - B. Hosing down
 - C. Actual removal of beddings
 - D. Incineration of bedding
 - E. Vacuum cleaning
17. Which cleaning chemicals have a high “wetting” ability
- A. Halogens
 - B. Synthetic detergents
 - C. Phenolic
 - D. Cresol
 - E. Lysol
18. Which of the following on iodine germicides?
- A. Are active against all bacteria and their spores
 - B. Active against pathogenic bacteria
 - C. They only destroy spores
 - D. They are not fungicidal
19. Which of the following methods requires use of a lethal chamber?
- A. Gas inhalation
 - B. Use of vapours
 - C. None of the above
 - D. A and B
 - E. MS222
20. An SPF animal is reared under which kind of facility
- A. An isolator
 - B. A barrier maintained house
 - C. A convectional animal house
 - D. Under absolute negative pressure in the house
 - E. Non barrier facility

21. In observing asepsis which combination of items are flamed
- A. Wire loop and specimen
 - B. Culture medium and wire loop
 - C. Wire loop and lips of bottle with sample
 - D. Specimen and culture medium
 - E. Test tube rack and wire loop
22. Which male laboratory animal has nipples thus hard to sex
- A. Hamster
 - B. Rat
 - C. Guinea pig
 - D. Mouse
 - E. Rabbit
23. Why are pre-anaesthetics majority used
- A. To synergise the anaesthetics effects
 - B. To counter the side effects
 - C. To reduce the dosage of the main anaesthetic
 - D. All of the above
 - E. None of the above
24. Which euthanasia technique is not necessary for rats and guinea pigs?
- A. Stunning
 - B. Neck dislocation
 - C. Barbiturate injection
 - D. Gas inhalation
 - E. Vapour inhalation
25. What does replacement mean in the 3R's
- A. Use of an inanimate as an alternative
 - B. Use of less sentient animals
 - C. Use of cell or tissue cultures
 - D. All of the above
 - E. None of the above
26. In the 3R's refinement means
- A. Reduction of pain or distress
 - B. Better housing
 - C. Good nutrition laboratory animals
 - D. Reduction of pathogens in a cage

27. When should a 'needle reuse' policy not be adhered to?
- A. Animals are housed in the same cage
 - B. For different species
 - C. In case of sick, animals
 - D. Barbing not present in needle
 - E. Needle deterioration has occurred
28. Which of the following is not recommended method of handling mice
- A. Holding the hindlimbs
 - B. Hold by the tail
 - C. Pick tail with forceps
 - D. Hold back of neck
 - E. Hold both the tail and back of neck
29. Which of the following is not a principle in care of vertebrate animals
- A. Use of appropriate species
 - B. Provision of adequate veterinary care
 - C. Establishment of non-human endpoints
 - D. Experimentation one under supervision of an animal technician
 - E. Reduction of stress and pain
30. Which of the following is untrue?
- A. Restraint should be considered as normal housing
 - B. Alternatives to physical restraint should be considered
 - C. Animals should be trained for restraint
 - D. Animals that fail to adapt should be removed from the study
 - E. Provision for observing animals at intervals should be ensured

SECTION B (40 Marks) Attempt all questions in this section

1. a) Describe the extra duties that may be done in an experimental animal house. **(10 marks)**
- b) Describe the **FOUR** definable and achievable levels of sanitation of cleaning in a laboratory animal facility. **(10 marks)**
2. With reference to animal species and mode of application describe any **TEN** identifying markers. **(20 marks)**