BIO 105
(BIOLOGICAL TECHNIQUES)

Past question

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BIO 105

DEPARTMENT OF PLANT SCIENCE AND BIOTECHNOLOGY RUS
SESSIONS: 2018-2020 SESSIONS LIKELY QUESTIONS

Course Title: Biological techniques:
Course Code: Bio 105

Time allowed: 1 hours

Instruction: Attempt all questions

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Part A

1. Mention the seven main points to be followed for collecting plant specimen i_____ii_____iii_____iv_____v_____vi_____vii_____
2. Four details that should be noted in field notebook should include i_____ii_____iii_____iv_____
3. Preserved plant specimen provides us with important information about _____and _____
4. Why does staining of cells lakes place _____ which of the staining is commonly used for bacterial and insect_____
5. Four possible plant specimen identity to be recorded during collection include i_____ii_____iii_____iv_____v_____
6. What is the main function of herbarium/herbaria _____
7. Whenever a plant plays a role in research study. There is always a need to document such evident in form of _____ that will be deposited in the herbarium
8. Plant collection are made by _____
9. Four equipment to be considered when planning for plant specimen collection include i_____ii_____iii_____vi_____
10. After collecting and pressing plant specimen, the next step in preserving a specimen is _____
11. When plant specimen are ready for storage, they should be stored in _____ or _____
12. In viewing of microscope, what are there precautions to be taken i_____ii_____iii_____iv_____
13. One important information that is very essential during plans to embark on plant specimen collection is _____
14. Five important materials needed or required when going for plant specimen collection

i_____ii_____ii_____iv_____v_____

15. How is mounting of plant specimen done_____

16. Mention 5 parts of microscope and their uses

PART B

17. Two things to be viewed in a microscope using dry mount include i_____ ii_____ii_____ while one thing to be viewed using wet mount is _____

18. The amount of oxygen used up during biological organism demand can be measured in _____

19. Differentiate between primary data and secondary data _____

20. Mention three types of food chain i_____ ii_____iii_____

21. Four tools for collection of wild- life animals are i_____ii_____iii_____iv_____

22. A fast moving insect can be captured using _____ and techniques

23. Four factors that determine the sampling method are i_____ii_____iii_____iv_____

24. Which type of sampling method should be applied where a larger sampling is broken or divided into units to make the job easy _____

25. Three limitations in recapturing method/technique include i_____ii_____i_____

26. Define (i)Alkalinity _____(ii) Benthic Organism_____

27. The three popular techniques in hydro-biology techniques in collection of specimens i_____ii_____iii_____

28. Transparency of water can be measured using i_____ii_____

29. Mention two ways you can collect an amphibians for preservation or research i_____ii_____

30. Solid that dissolve or suspended in water column can be determined by _____

31. Mention two sampling method you know: i_____ii_____

32. Mention five types of sampling method i_____ii_____iii_____

33. The two convex lens that magnifies . . image are called _____ and _____

34. Name two types of microscope and two types of culture media i_____ii_____iii_____iv_____

SOLUTIONS TO BIO 105
BIOLOGICAL TECHNIQUES
PART A 2018-2020 SESSIONS

(1) (i) planning (ii) pressing (iii) Drying (iv) poisoning (v) storing (vi) labeling (vii) mounting

(2) (i) Data (ii) Number of plants (iii) serial number or collectors name, year & NO (iv) Name of plants

(3) plant diversity and distribution

(4) TO view clearly all the internal features of an organism; differential staining

(5) (i) where and when it was collected (ii) habitat of the plant (iii) Flower colour, scent and size (iv) Habitat characteristic such as soil type

(6) Herbarium / herbaria act as a store houses to sought for data for a particular plant and also ensure the availability of plants for future research.

(7) plant specimen voucher

(8) Botanist scientist

(9) (i) collectory pick for digging up roots and rhizomes of herbaceous plants
(ii) A strong knife and cutlass for cutting branches and other plant parts
(iii) A pair of pruning shears or secateurs for cutting woody and hard materials
(iv) Scanning objective lense

(10) Removal of all moisture from the plant by drying

(11) A wooden or steel almirahs for safe deposit and Feature record

(12) (i) clean your lense with lense cleanser paper
(ii) avoid vibration on the surface of view of the microscope
(iii) The microscope should be place on a flat surface
(iv) Keep your both eyes open

(13) Get the available maps and collect local information concerning the plant specimen

(14) (i) polyethene or collecting bags
(ii) camera & Films
(iii) Field press, Folder or absorbant tissue paper
(iv) Field note book
(v) A pair of forceps of flower buds study

(15) either by glewing the specimen or by stiching

(16)

PART B

(17) (i) wings of insects
(ii) Feather
wet mount: onion bulb

(18) Oxygmeter

(19) primary data is a type of data that you collect by yourself while secondary data is the data that has been gathered by other people as a result of others research kept in view

(20) (i) Grazing food chain
(ii) parasitic food chain
(iii) Detritus Food chain

(21) (i) Net (ii) Aspirators
(iii) steel trowel (iv) Forceps

(22) mark and recapture techniques

(23) (i) population size
(ii) population characteristics
(iii) A sampling unit
(iv) Terrain to perform the sampling

(24) Clamster sampling method

(25) (i) one can sustain injury for running around to get the animal
(ii) capturing the animal can lead to injuring the animals hence, their behaviour (animals behaviors) can change
(iii) There are some animals you cannot catch unless with gun and cutlass or knife

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(26) (i) Alkalinity: is the amount of acid required to separate the base from the water
(ii) Benthic organism: organisms that live at the bottom of the water or organisms that live in river stream bed

(27) (i) Biological technique
(ii) Physical technique
(iii) chemical technique

(28) (i) photo electric cells
(ii) secchi disc

(29) (i) use of baited trap
(ii) use of Drift Fence and pitfall as barrier

(30) Evaporation

(31) i) probability sampling method
ii) Non-probability method

(32) (i) Census sampling method
(ii) simple random sampling method
(iii) stratified sampling method
(iv) Systematic sampling method
(v) cluster sampling method

(33) Objective lens
ocular lens

NOTE: Objective lens magnifies and sent it to the ocular lens for further magnification

(34) (i) Light & Electron microscope
(b) culture media and
(i) Broth - liquid form
(ii) Agar - semi-liquid form or in [illegible]