KENYATTA UNIVERSITY

EXAMINATION FOR THE DEGREE OF BACHELOR OF MEDICINE AND BACHELOR OF SURGERY (MBChB LEVEL II)

HPA I: PATHOLOGY I PAPER III: PRACTICAL

2ND SEMESTER 2020/2021 TIME 2 HOURS

INSTRUCTIONS

Attempt all the questions in the booklet provided

1. a) Identify the lesion
   b) Name one cause

2. a) Identify lesion A
   b) Identify lesion B

3. a) Identify the adaptive process
   b) State two reasons for the diagnosis in (a) above

4. a) Identify the lesion
   b) State the Pathogenesis

5. a) Name the lesion
   b) State the common source or development of this lesion

6. a) Identify the equipment
   b) State any two conditions that can be diagnosed using the equipment in (a) above

7. a) What immunodeficiency condition could the child pictured be suffering from?
   b) State two other symptoms that are common with this condition

8. a) Identify the cell
   b) List two functions of the cell type in immunity

9. a) Identify the cell belonging to the adaptive arm of the immune system
   b) State two characteristics of the cell type above

10. a) Name the type of test shown
    b) State one application of the test

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11. a) Name the type of test shown
    b) Identify the positive sample

12. Explain how complement is involved in the pathology of the condition shown

13. a) Identify the disorder caused by the karyotype shown
    b) List two clinical features of the disorder named in (a) above

14. State the possible chromosomal patterns for the disorder shown by the karyotype

15. a) Name the two cell types
    b) State the functional cluster of differentiation marker characteristic of these cells upon activation by a gram-negative bacterium

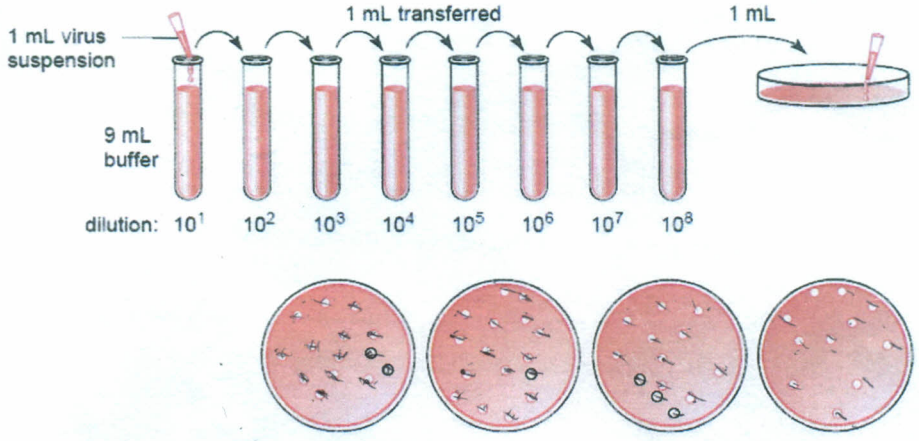
16. a) State the nature of the antigen in the test system
    b) Outline the principle behind a positive test

17. a) Identify the specimen
    b) State its routine application in the laboratory

18. Identify any TWO pathways indicative of tissue damage in the diagram

19. a) Identify the apparatus
    b) State what it is used for in a diagnostic laboratory

20 A virus suspension was subjected to 10-fold serial dilutions by adding 1 mL of the original suspension to 9 mL of a dilution buffer. After mixing, 1 mL of that dilution was added to 9 mL of fresh dilutionbuffer and mixed; these steps were repeated a total of eight times. One-mL aliquots from this 10^8-fold dilution were applied to four different Petri dishes of susceptible cells and plaques (bottom) were allowed to develop. Calculate the plaque-forming units (PFU) per mL



21 a) Identify the virus shown
b) Name a drug that is used to treat patients infected with the virus

22 a) Identify the virus stained below
b) State the site of replication of this virus

23 a) Name the virus that causes the condition shown
b) State the mode of transmission of the virus in (a)above

24 a) Identify the skin condition shown
b) State the etiological agent for the skin condition in (a) above

25 a) Identify the specimen shown
b) State the disease caused by the parasite involved

26 a) State the microscopy procedure/technique shown
b) Name two parasites that can be detected using the procedure shown

27 a) Identify the specimen shown
b) State the location in the host and one major clinical outcome associated with the specimen

28 a) Identify the specimen shown
b) State one major clinical outcome associated with the specimen

29. a) Identify the parasite shown
    b) State the predilection site of the adult parasite in the vertebrate host

30. a) Name the clinical condition shown
    b) State the scientific name of the arthropod responsible for the condition shown

31. a) Name the clinical condition shown
    b) Name one protozoan parasite responsible for the condition in (a) above

32. a) Identify the arthropod
    b) Name the disease transmitted by the arthropod in (a) above

33. a) Identify the parasites shown
    b) Name the arthropod that transmit the parasites in (a) above

34. a) Identify the parasite shown
    b) State the effect of the parasite in (a) above in the human host

35. Identify any two types of ova from the photo shown

36. a) Name the mordant used in ZN staining technique
    b) State the mode of action of the mordant in (a) above

37. The medium shown is both selective and differential
    a) Name the components of the medium that make it selective
    b) State two organisms that will grow on the medium producing pink colonies

38. The photo shown was obtained from a patient who had undergone surgical procedure on his right hand.
    a) Name the likely causative organism
    b) Name one major toxin produced by the organism in (a) above and state its mode of action

39. A 28-year-old woman who is 10 weeks pregnant presents to the obstetrics clinic for prenatal care. She has a history of treatment for syphilis 7 years previously. The results of serologic tests for syphilis are as shown in the photo
    a) Name two virulence factors for the causative organism
    b) Name the antibody to which the test shown is directed

40. a) Identify the bacteria that gives the type of colony growth
    b) Name the selective medium used to isolate the organism in (a) above

41. a) Identify the causative organism of the infection shown
    b) Name two drugs that are used in the treatment of the infection shown

42. a) Identify the type of reaction on the plate medium shown
    b) Name one organism that produces such a reaction

43. a) Identify the test
    b) Explain the principle behind the test

44. a) Identify the media
    c) State its use in clinical bacteriology

45. a) Interpret the test
    b) Name two organisms that are identified using this test

46. a) Identify the most likely bacteria on the media
    b) Explain how you arrived at your answer in (a) above)

47. a) Identify the method of fungal diagnosis in the photograph
    b) Name two fungal diseases that can be diagnosed by this method

48. a) Identify the fungal disease in the photograph
    b) How is the disease in (a) above treated.