KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2019/2020

END OF YEAR EXAMINATION FOR THE DEGREE OF BACHELOR OF MEDICINE AND BACHELOR OF SURGERY (MBChB Level II)

HPA 200: PATHOLOGY 1 PAPER III – PRACTICAL QUESTIONS

DATE: Wednesday, 31st March 2021 **TIME: 8.30 a.m. - 1.30 p.m.**

INSTRUCTIONS:

1. This paper contains 48 questions
2. Each question is worth a maximum of two marks
3. Answer all the questions in the answer booklets provided.

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

2. a) Identify the cell belonging to the innate arm of the immune system
   b) Name two characteristic phenotypic markers of the cell

3. State any two preformed granular components of the cell and their pathologic effects

4. a) Identify the equipment shown
   b) Give one shortcoming of the test in which the equipment in (i) is involved

5. State how complement is involved in the pathology of the condition shown.

6. a) Identify the immune response shown in the electro-micrograph.

b) State the inherent diagnostic condition arising in the host if the response in (a) is defective.

7. a) Identify the phenomenon shown in the photograph by the red arrow

b) State its practical significance in innate immunity

8. a) State the nature of the challenge antigen in the test system

b) State the diagnostic characteristic of the positive test

9. Identify two effectors of immunopathology in the diagram which are diagnostically quantifiable in bacterial infections

10. a) Identify the phenomenon shown in the photomicrograph

b) State the diagnostic significance of the phenomenon

11. a) Identify the phenomenon shown in the photograph

b) State how the phenomenon could be demonstrated in the laboratory

12. The table shows the results of an ABO (ABH) blood grouping test

Genotype	Blood group phenotype	Antigens on erythrocytes	Serum antibodies
AA or AO	A	A	Anti-B
BB or BO	B	B	Anti-A
AB	AB	A and B	None
OO	O	H(None)	Anti-A and Anti-B

(a) State why individuals with blood group O practically have anti-A and anti-B serum

(b) Explain why antibody isotype lgM rather than lgG is more likely to be implicated in a transfusion - related hemolysis

13. a) Identify the condition

b) Name the inheritance pattern

14. a) Identify the condition

b) Name the most common cause of abnormality

15. a) Identify the lesion

b) Name the observation leading to the identification.

16. a) Name the lesion

b) Name the common source of the lesion

17. Classify lesions A and B

a) A .....

b) B .....

18. a) Identify the inflammation lesion

b) Name the morphologic pattern

19. a) Identify the adaptive process

b) Name the stimuli

20. The organism shown on the slide was recovered from a urine specimen of an outpatient in Kiambu Level 5 Hospital.

a) Identify the most probable organism

b) Name two virulence factors that enable the organism in (i) above to cause disease

21. a) What is the sterilization agent used in the equipment shown?

b) State the principle of sterilization of the equipment in (i) above

22. A 16-year-old male patient reported to the health center complaining of fever, headaches and malaise. The neck was also swollen. Examination of the mouth revealed a white substance as shown in the photograph.

a) Identify the causative organism

b) Outline the mode of action of the toxin produced by the organism in (i) above

23. a) Identify the type of reaction on the plate medium shown

b) Name one organism that produces such a reaction

24. A 20-year-old pregnant lady presents to the clinic with a 2-week history of flu-like symptoms. Physical examination reveals a generalized nontender lymphadenopathy and numerous cutaneous lesions on the back as shown in the photograph.

a) State one specific test for diagnosis of the infection

b) Name one virulence factor that enables the organism to cause the infection above.

25. a) State two organisms that would give the reaction in the slide shown

b) Name two stains that can be used as counter stains in the staining technique used.

26. a) Identify the causative organism of the infection shown

b) Name two topical antifungal drugs used in the treatment of the infection shown

27. a) Outline the mode of action of the drug shown

b) List two organisms whose infections are treated with the drug shown

28. a) Interpret the test

b) Name two organisms that are identified using this test

29. a) Identify the bacteria on the media

b) Explain how you arrived at your answer

30. a) What indicates a urinary tract infection on this test

b) What is principle of a positive test

31. a) Identify the test

b) Explain the principle behind the test.

32. a) Identify the media

b) State its use in clinical bacteriology

33. a) Identify the tool

b) Name the clinical specimen is collected using the tool

34. a) State the principle used by the diagnostic test demonstrated

b) Which patient sample is appropriate for the test

35. a) Name one virus that employs the replication strategy shown

b) Name two drugs that inhibit the viral assembly

36. a) Identify the virus that induce this pathologic condition

b) Name the vaccine that is administered to prevent this condition

37. 45. 2.5 x 10^4 human foreskin fibroblasts were seeded in each well of a 24 well-plate, and 250 µl of 10^4 PFU/ml HPV virions were used to infect the fibroblasts. Calculate the MOI.

38. Identify A and B and state the role of each in the laboratory study of parasites.

a) A_____

Role_____

b) B_____

Role_____

39. a) Identify the organism

b) Name the clinical disease caused by the organism in (a) above.

40. a) Identify the specimen shown

b) Name the clinical disease associated with the specimen in (a) above.

41. a) Identify the procedure shown

b) Name the clinical disease caused by the organism shown

42. a) Identify the specimen shown

b) Name the clinical disease associated with the specimen in (a) above.

43. a) Identify the organism shown

b) Name the clinical disease transmitted by the organism shown

44. a) Give the scientific name of organism responsible for the condition shown

b) Name the clinical condition shown

45. a) Identify the parasitic infection shown

b) State the main method of control of the infection in (a) above

46. a) Identify the parasitic condition shown.

b) Name the vector involved in the transmission of the condition in (i) above

47 a) Identify the protozoal parasite shown in the picture.

b) Give the scientific name of the vector that transmits this parasite

48. a) Identify the parasitic disease shown in the picture

b) State the mode of transmission of this disease