



AMREF INTERNATIONAL UNIVERSITY
SCHOOL OF MEDICAL SCIENCES
DEPARTMENT OF NURSING AND MIDWIFERY SCIENCES
BACHELOR OF SCIENCE IN MIDWIFERY
END OF SEPTEMBER-DECEMBER TRIMESTER 2022 EXAMINATIONS

BSM 211: MEDICAL MICROBIOLOGY

DATE: 28TH NOVEMBER 2022

TIME ALLOWED: 2 HOURS

START TIME: 9.00AM

FINISH TIME: 11.00AM

INSTRUCTIONS:

1. The exam is set out of 70 marks
2. Section A has 20 MCQs, each is one mark
3. Section B has Short Answer Questions (SAQs) worth 50 marks
4. For section A, select only one correct response
5. Answer all the questions in all sections
6. Do not write on the question paper

1. Polio virus belongs to which group in Baltimore virus classification system?
 - A. Group 3
 - B. Group 4
 - C. Group 5
 - D. Group 6
 - E. Group 7

2. Which of the following statements is **FALSE** about Human Papilloma Viruses:-
 - A. HPV 6 and 11 cause genital warts
 - B. Vaccination of postmenopausal women has shown to reduce cervical cancer
 - C. HPV 16 and 18 cause cervical cancer
 - D. Co-infection with HIV increases the risk of cervical cancer
 - E. 5-fluorouracil and trichloroacetic acid has a role in management of HPV

3. The following vaccine contains a mutant strain of a virus that has been derived from a wild-type virulent strain:-
 - A. Live attenuated virus vaccines
 - B. Inactivated virus vaccine
 - C. Live recombinant virus vaccines
 - D. Virion subunit vaccines
 - E. Messenger RNA- based vaccines

4. In viral infection, the following happens during incubation period:-
 - A. The virus is cleared from the body by the immune system
 - B. Virus replication happens at an intracellular level
 - C. This period commonly lasts for a few days
 - D. This period commonly lasts for a few hours
 - E. Virus replication happens at an extracellular level

5. The following is a form of therapy that uses a combination of nucleoside analogs and protein synthesis inhibitors in HIV and was discovered in?
 - A. Gene therapy, 1998
 - B. Chemotherapy, 1999
 - C. Highly active anti-retrovirus therapy, 1995
 - D. Highly active anti-retrovirus therapy, 1994
 - E. Molecular therapy, 2007

6. Neonatal herpes is a disease that is majorly caused by infection with:-
- A. HSV-1
 - B. HSV-2
 - C. HPV 6
 - D. HPV 16
 - E. None of the above
7. The following is **FALSE** about Human Papillomavirus (HPV)
- A. Is classified under group I
 - B. Replicates in the nucleus
 - C. Double-stranded DNA virus
 - D. Double-stranded RNA virus
 - E. Infects epithelial cells
8. The following agent is not used in HIV-1 treatment?
- A. Lamivudine
 - B. Ritonavir
 - C. Rimantadine
 - D. Maraviroc
 - E. Enfuvirtide
9. Which of the following antiviral drugs is the most appropriate for treating alpha-virus infection:-
- A. Lamivudine
 - B. Amantadine
 - C. Ganciclovir
 - D. Zanamivir
 - E. Dolutegravir
10. Herpes infections are controlled by?
- A. Vaccines
 - B. Chemotherapy
 - C. Hygiene and social distancing
 - D. Surgery
 - E. Use of facial mask
11. The infective stage of *Trichomonas vaginalis* is the
- A. Metacyclic trypomastigote
 - B. Cyst
 - C. Trophozoite
 - D. Metacyclic promastigote
 - E. Cercaria

12. The following statement is not true concerning management of malaria in pregnancy
- A. Artemether lumefantrine and not oral quinine is recommended during the 1st trimester
 - B. AL and clindamycin are indicated in the 2nd and 3rd trimester
 - C. IV Artesunate should be used as 1st line in the management of server malaria in pregnancy
 - D. Artemether or quinine can be used in the management of server malaria in pregnancy
 - E. Supportive care is important in the management of severe malaria
13. Lesions on the cervix are likely due to infection with the following parasite
- A. Trichomonas vaginalis
 - B. Schistosoma haematobium
 - C. Schistosoma mansoni
 - D. Entamoeba histolytica causing extraintestinal amoebiasis
 - E. Paragonimus westermani
14. In the newborn, congenital toxoplasmosis can be responsible for all of the following pathologies EXCEPT
- A. Hydrocephalus
 - B. Intracranial calcifications,
 - C. Strabismus,
 - D. Hepatosplenomegaly,
 - E. Thrombocytopenia
15. The following statement is FALSE
- A. Pregnancy is an especially vulnerable time for acquiring parasitic infections,
 - B. Parasitic infections in pregnancy may be associated with adverse outcomes
 - C. Helminthic infections during pregnancy may affect the maternal immune response and immune system function in the baby after birth
 - D. There are safety concerns with the use of recommended drugs for parasitic infections during pregnancy.
 - E. Pregnant women in endemic areas should be excluded from the mass administration of anthelmintic drug therapy programs
16. Which is the recommended oral antifungal agent for the treatment of uncomplicated vulvovaginal candidiasis
- A. Nystatin
 - B. Clotrimazole
 - C. Fluconazole
 - D. Ceftriaxone
 - E. Azithromycin

17. The following organisms are usually associated with urinary tract infections except
- A. *Pseudomonas aeruginosa*
 - B. *Escherichia coli*
 - C. *Proteus spp*
 - D. *Clostridium difficile*
 - E. *Staphylococcus saprophyticus*
18. A Gram stain of an eye discharge from a 2-week-old baby presenting with peri-orbital oedema shows gram-negative intracellular diplococci. The most likely pathogen is
- A. *Neisseria gonorrhoeae*
 - B. *Chlamydia trachomatis*
 - C. *Ureaplasma urealyticum*
 - D. *Moraxella catarrhalis*
 - E. *Pseudomonas spp*
19. Serological test for syphilis which is suitable for screening a large number of specimens
- A. Fluorescent treponemal antibody absorption test
 - B. Venereal Disease Research Laboratory test
 - C. Treponema pallidum Haemagglutination assay
 - D. Enzyme-linked immunosorbent assay (ELISA)
 - E. Widal test
20. Prevention and control of gonorrhoea infections would encompass the following approaches **except**
- A. Accurate diagnosis of patients
 - B. Treatment of sexual contacts of diagnosed individuals
 - C. Vaccination of high-risk individuals
 - D. Use of barrier methods like condoms during sexual contact
 - E. Observing Antimicrobial Stewardship in prescription of agents for treatment

SECTION B: SHORT ANSWER QUESTIONS**(50 MARKS)**

1. Discuss Baltimore classification of viruses giving examples of two (2) viruses in each class (5 marks)
2. Microbiological detection system identifies pathogens and related pathogen-host products. Name any three (3) detection systems, specimen type and expected results (5 marks)
3. Discuss neonatal herpes under the following sub-heading
 - a) Causative agent (1 mark)
 - b) Transmission (2 marks)
 - c) Clinical manifestation (2 marks)
4. Giving an example of an agent in each, briefly discuss five (5) classes and mechanism of action of antiretroviral agents used in HIV management (5 marks)
5. List FIVE (5) parasite infections that may cause maternal anaemia and contribute to fetal anaemia at delivery (5 marks)
6. List FIVE (5) obstetrical outcomes associated with placental malaria (5 marks)
7. Discuss the clinical manifestations of gonorrhoea in men, women and babies, and the likely complications of untreated infections (10 marks)
8. List 3 common bacterial pathogens associated with urinary tract infections and discuss the symptoms of UTIs and why screening for the condition is very important in pregnant females (10 marks)