



UNIVERSITY OF NAIROBI

DEPARTMENT OF MEDICAL MICROBIOLOGY

BDS/BPharm 2nd Year (UPC 208 & HMM 210)

BACTERIOLOGY MCQ CAT

23 May 2016

V28/30331/2015

10.30AM-11.30AM

INSTRUCTIONS: ANSWER ALL QUESTIONS

1. Which is not a clinical manifestation of lepromatous leprosy?
 - A) Many bacilli are present in lesions.
 - B) Numerous deep lesions are concentrated in cooler areas of the body.
 - C) Mutilation of the extremities is common.
 - D) No skin nodules are present.
 - E) Patients are not reactive to lepromin.
2. What is the virulence factor in *Mycobacterium tuberculosis* that prevents the organisms' destruction by lysosomes within macrophages?
 - A) Cord factor
 - B) Exotoxin
 - C) M protein
 - D) Capsule
 - E) Endotoxin
3. What organism is responsible for the majority of cases of otitis media in children?
 - ~~A) Streptococcus pneumoniae~~
 - B) Staphylococcus aureus
 - C) Streptococcus pyogenes
 - D) Streptococcus mutans
 - E) Staphylococcus epidermidis
4. Which streptococcal species is involved in the production of cavities?
 - A) Streptococcus pneumoniae
 - B) Streptococcus agalactiae
 - C) Streptococcus pyogenes
 - D) Enterococcus faecalis
 - E) Streptococcus mutans

5. How are the streptococci differentiated from the staphylococci when viewed microscopically following the Gram stain procedure?

- A) ~~Staphylococci are Gram positive, while streptococci are Gram negative.~~
- B) ~~Staphylococci are Gram positive and grow in grape-like clusters, while streptococci are also Gram positive, but grow in chains.~~
- C) ~~Staphylococci are Gram positive cocci, while streptococci are Gram positive bacilli.~~
- D) ~~Staphylococci are Gram negative bacilli, while streptococci are Gram negative cocci.~~
- E) ~~They cannot be differentiated microscopically.~~

6. Primary infections caused by *Streptococcus pyogenes* are due to the organisms invading what two body sites?

- A) Nose and vagina
- B) Skin and eyes
- C) Eyes and gastrointestinal tract
- D) Mouth and urethra
- E) Skin and throat

7. Why is antibiotic resistance among the salmonellas on the rise?

- A) ~~New strains of these organisms are emerging.~~
- B) ~~The organisms are naturally resistant to most antibiotics.~~
- C) ~~Most patients who contract salmonellosis fail to visit a physician.~~
- D) ~~Viral infections cannot be treated with antibiotics.~~
- E) ~~The practice of adding antibiotics to animal feeds.~~

8) Spores are killed by

- A) ~~70% alcohol~~
- B) ~~Filtration~~
- C) ~~Autoclaving~~
- D) ~~Surfacants and Soaps~~
- E) ~~Hydrogen Peroxide~~

9. Which of the following bacteria is rarely associated with Urinary Tract Infections?

- A) ~~E.coli~~ ✓
- B) ~~Enterobacter spp~~
- C) ~~Proteus spp~~
- D) ~~Shigella spp~~
- E) ~~All the above~~

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10. Which of the following bacterium produces mucoid colonies on MacConkey Medium?
- A) Salmonella
 - B) Shigella
 - C) Klebsiella
 - D) Proteus
 - E) None of the above
11. Which of the following statements about bacterial genetics is false
- A) Plasmids are not essential to a cell's survival
 - B) Genetic information is transferred to the next generation during cell division
 - C) During transduction, naked DNA is taken up from the environment by bacterial cells.
 - D) During conjugation, the recipient strain is converted into a donor cell
 - E) Recombination is the bacterial equivalent of sexual reproduction in eukaryotes.
12. Virulence factors of *Neisseria gonorrhoeae* include the following except
- A) Capsule
 - B) Outer membrane proteins
 - C) Pili
 - D) Endotoxin
 - E) IgA₁ protease
13. True about *Haemophilus ducreyi*
- A) Transmission is by droplet inhalation
 - B) Causes a painless ulcer
 - C) Only requires the V factor for growth*
 - D) Metronidazole is the drug of choice *
 - E) Fastidious and requires a special nutritive base
14. *Bordetella pertussis*
- A) Gram-positive coccobacilli
 - B) Obligate anaerobes
 - C) Large polysaccharide capsule
 - D) Forms spores in nutritionally deficient media
 - E) Non-Motile
15. All the following antimicrobial agents are useful for the treatment of whooping cough except
- A) Azithromycin ✓
 - B) Amoxicillin ✓
 - C) Chloramphenicol ✓
 - D) Ampicillin ✓
 - E) Flucytosine

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16. *Brucella melitensis* can be transmitted to humans via

- A) Mother to child transmission
- B) Ingestion
- C) Traumatic inoculation
- D) Ampicillin
- E) Flucytosine

17. Not useful in the laboratory diagnosis of *Yersinia pestis*

- A) Blood
- B) Bubo aspirates
- C) Sputum
- D) CSF
- E) Bone marrow aspirate

18. *Chlamydia trachomatis*

- A) Facultative intracellular bacteria
- B) Small motile bacteria
- C) Obligate human pathogens -
- D) Lack a cell wall
- E) Stain poorly with the Gram stain

19. The following item is utilized in laboratory isolation of *Neisseria meningitidis* from CSF specimen

- A) Potassium tellurite agar
- B) Fildes McIntosh jar
- C) CO₂ extinction jar
- D) Gas Pak jar
- E) Loeffler's serum agar

20. Not useful in the laboratory diagnosis of *Haemophilus influenzae*

- A) Neutral red ✓
- B) *Staphylococcus aureus* ✓
- C) Malachite green
- D) Candle extinction jar
- E) Crystal violet

21. The most likely organism associated with periodontal disease

- A) *Streptococcus pyogenes*
- B) *Streptococcus agalactiae*
- C) *Staphylococcus aureus*
- D) *Haemophilus influenzae*
- E) *Streptococcus mutans*

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22. Virulence factors of *Escherichia coli* associated with neonatal meningitis
- A) Shiga-like toxin
 - B) K1 antigen
 - C) Flagella
 - D) Haemolysin
 - E) Heat liable toxin
23. The following are characteristics of Enterobacteriaceae except
- A) Produce cytochrome oxidase enzyme
 - B) Facultative anaerobes
 - C) Reduce nitrates to nitrites
 - D) Gram-negative rods
 - E) Ferment glucose with or without formation of gas
24. The following enhances formation of calculus in pathogenic *Proteus* species
- A) Exotoxin production
 - B) Urease
 - C) Production of cytochrome oxidase
 - D) Haemolysins
 - E) Capsule
25. Bacteria are most sensitive to antibiotics during this phase of growth
- A) Log phase
 - B) Decline phase
 - C) Stationary phase
 - D) Death phase
 - E) Lag phase
26. Organisms which grow best in presence of low concentrations of oxygen are referred to as
- A) Strict aerobes
 - B) Obligate anaerobes
 - C) Facultative anaerobes
 - D) Microaerophiles
 - E) Mesophiles
27. Toxic shock syndrome is caused by
- A) *Vibrio cholerae*
 - B) *Clostridium tetani*
 - C) *Staphylococcus aureus*
 - D) Enterotoxigenic *E. coli*
 - E) *Streptococcus agalactiae*

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28. In diarrhea associated with cholera toxin, there is activation of the following enzyme

- A) ATP
- B) Adenylate cyclase
- C) cAMP
- D) Na/K ATPase pump
- E) Hyaluronidase

29. Structure on the bacterial cell responsible for adherence to host cells

- A) Spore
- B) Flagella
- C) Fimbriae
- D) Mesosome
- E) Plasmid

30. *Staphylococcus epidermidis* is associated with the following infections except

- A) Endocarditis
- B) Scalded skin syndrome
- C) Bacteraemia
- D) Neonatal sepsis
- E) Peritonitis

31. *Bacillus anthracis* is associated with the following except

- a. Bamboo rod appearance
- b. Medusa head-like colonies
- c. Polar flagella
- d. Septicaemia
- e. Polypeptide capsule

32. Laboratory identification test which does not apply to anaerobic bacteria is

- a. Nagler reaction
- b. Oxidase test
- c. Gas liquid chromatography
- d. Growth in different concentrations of bile
- e. Nitrate reduction test

33. Organism which is associated with clinical manifestations due to inhibition of transmission of nerve impulses is

- a. *Clostridium histolyticum*
- b. *Clostridium sporogenes*
- c. *Clostridium tetani*
- d. *Clostridium botulinum*
- e. *Clostridium septicum*

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34. Which one of the following contributes to pathogenicity specifically in Gram negative bacteria?
- a. ~~Plasmid~~
 - b. Lipopolysaccharide
 - c. Capsular antigen
 - d. Hyaluronidase
 - e. M protein
35. Antibacterial antibiotic which functions through cell wall synthesis inhibition is
- a. ~~Vancomycin~~
 - b. Ciprofloxacin
 - c. Polymyxin
 - d. Azithromycin
 - e. Clindamycin
36. Which one does not apply to Corynebacterium diphtheriae
- a. Pseudomembrane
 - b. Albert's stain
 - c. Schick test
 - d. Lysogeny
 - e. ~~Alpha toxin~~
37. Endogenous infection is most likely to be associated with species of the following except
- a. Actinomyces
 - b. ~~Nocardia~~
 - c. Borrelia
 - d. Bacteroides
 - e. Fusobacterium
38. Pathogenic genera of spirochaetes are all
- a. Associated with mother to foetus transmission
 - b. Non-motile
 - c. ~~Susceptible to penicillin~~
 - d. ~~Non-culturable in artificial media~~
 - e. Visualized by Gram's stain and light microscope
39. Antibiotic susceptibility test which can be used to obtain minimum bactericidal concentration is
- a. Epsilometer test
 - b. Disc diffusion test
 - c. Molecular method
 - d. ~~Tube dilution~~
 - e. Tablet diffusion test

40. Laboratory test for syphilis which detects anti-cardiolipin antibody is
- a. Rapid plasma reagin card test (RPR)
 - b. PCR
 - c. Fluorescent treponema antibody absorption test
 - d. Treponema pallidum Haemagglutination assay (TPHA)
 - e. Treponema pallidum immobilization test

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