

Master of Pharmacy Examination, 2017  
2nd Semester

Microbiology - B (III)

Time: Three Hours

Full Marks: 100

Answer any five questions

1. Briefly describe the official procedure of sterility testing of different pharmaceutical preparations.  
What is "Chemical Indicator" used to validate the sterilization process? 16+4 = 20
  
2. Write a note on preservation of Pharmaceuticals with special emphasis on "Rancidity" and "Moisture-content". What is Redox Potential of Pharmaceuticals? 15+5=20
  
3. Discuss the consequences of indiscriminate use of antibiotic. What is superbug or super bacterium?  
Write the name of causative agent which causes antibiotic associated diarrhoea. Enlist few probiotic strains which are used for the restoration of normal gut microbiota. 10+4+2+4=20
  
4. (a) Describe the methods for the detection of antagonistic activity of microorganisms in a programme of isolating antibiotic producing organisms from soil.  
(b) How antibiotics are extracted from culture media? 10+10 = 20
  
5. (a) Draw the structure of benzyl penicillin? Which strain is used for its industrial production? How the strain is improved?  
(b) Why inoculums are required to be developed before addition to the fermentation tank? Schematically describe the stages of development of inoculums.  
(c) Write a note on media constituents for the fermentative production of benzyl penicillin. [(1+1+3) + (2+3) +10] = 20
  
6. (a) Briefly discuss the structure and biosynthesis of peptidoglycan of bacterial cell wall. Discuss the mechanisms of actions of the following antibiotics (i) D- Cycloserine (ii) Vancomycin (iii) Penicillin.  
(b) Discuss about the mechanisms by which organisms are becoming resistant to multiple antibiotics. [3+5+ (2x3)]+6