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2022

M.Pharm. 2nd Semester End-Term Examination

MOLECULAR PHARMACEUTICS (NANO TECH AND TARGETED DD5)

(New Regulation)

Full Marks – 75

Time – Three hours

The figures in the margin indicate full marks
for the questions.

1. Answer the following (MCQ) : (20 × 1 = 20)
- (i) Which of the following identical structural arrangements applicable for phospholipid molecules?
- (a) Polar head and nonpolar tail
 - (b) Non-polar head and polar tail
 - (c) Polar head and polar tail
 - (d) Non-polar head and nonpolar tail
- (ii) Which of the following component may play a vital role in improving fluidity and reduce the interaction of liposome with blood component?
- (a) Phospholipid
 - (b) Cholesterols
 - (c) Surfactant
 - (d) Antioxidant
- (iii) X ray diffraction method are used to determine the _____.
- (a) Drug excipient interaction
 - (b) Structure and crystallinity
 - (c) Presence of functional group
 - (d) All of the above

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- (iv) Which of the following method is used to determine surface hydrophobicity?
- (a) Hydrophobic interaction chromatography
 - (b) Scanning electron microscopy
 - (c) FTIR
 - (d) None of the above
- (v) The first monoclonal antibody was licensed by FDA in the year _____.
- (a) 1996
 - (b) 1986
 - (c) 1975
 - (d) 2002
- (vi) Which of the following guideline is applicable for characterization of monoclonal antibody?
- (a) ICH QA1
 - (b) ICH Q6B
 - (c) ICH Q4B
 - (d) ICH Q1C
- (vii) Which of the following vaccine is prepared by using monoclonal antibody?
- (a) Hepatitis B vaccine
 - (b) MERS Vaccine
 - (c) Polio Vaccine
 - (d) All of the above
- (viii) The MAB technique is most used in which of the following diagnostic test?
- (a) Enzyme-linked immunosorbent assays (ELISA)
 - (b) Diagnostic of diabetes
 - (c) Diagnostic of urine
 - (d) None of the above
- (ix) Polysorbate 60 belongs to which class of surfactant?
- (a) Alkyl esters
 - (b) Alkyl amides
 - (c) Alkyl ethers
 - (d) None of the above
- (x) Aquasomes are also called as _____.
- (a) Bodies of water
 - (b) Bodies of oil
 - (c) Water molecules
 - (d) Aqueous molecules

- (xi) Pharmaceutical aerosol can effectively deliver the drug to _____
- (a) GIT (b) Lungs
(c) Kidney (d) None of the above
- (xii) Propellants are responsible for developing the _____ inside the Aerosol container
- (a) Pressure (b) Compatibility
(c) Moisture (d) None of the above
- (xiii) Which of the following is an example of Hydrocarbon type of propellant
- (a) Tetrafluoroethane
(b) Butane
(c) Chlorodifluoromethane
(d) None of the above
- (xiv) Aerosol containers should with stand pressure of
- (a) 140 to 180 psi
(b) 300-350 psi
(c) 500-700 psi
(d) None of the above
- (xv) Gene therapy in human was first practiced by Blease & Andresco to cure
- (a) Cystic fibrosis
(b) Haemophilia
(c) Thalassemia
(d) Severe combined immunodeficiency disease
- (xvi) Actuator plays a vital role in
- (a) Maintaining pressure
(b) Easy opening and closing of valve
(c) Flow of aerosol concentrate
(d) None of the above
- (xvii) The opening of spray actuator ranges between
- (a) 0.016 to 0.040 inches
(b) 0.5-0.75 inches
(c) 0.78-0.923 inches
(d) None of the above

(xviii) Which of the following metal may be used for metered dose inhalers (MDIs)

- (a) Tin
- (b) Aluminium
- (c) Plastic
- (d) Iron

(xix) The proniosome is applicable for

- (a) Water soluble drug
- (b) water insoluble drug
- (c) both hydrophilic and hydrophobic drug
- (d) all of the above

(xx) Conservation phase separation techniques are used for the preparation of

- (a) Niosome
- (b) Phytosome
- (c) Microspheres
- (d) Matrix tablet

2. Answer any seven questions :

(7 × 5 = 35)

- (a) Write short note monoclonal antibodies.
- (b) Briefly discuss the application of nanoparticles
- (c) Discuss different approaches of tumor targeting.
- (d) Briefly discuss the different classification and advantages of liposome drug delivery system.
- (e) Discuss the application of gene therapy for the treatment of cancer.
- (f) Write a short note on antisense molecules.
- (g) Discuss the application of phytosomes and aquasomes.
- (h) Write short note on brain targeted drug delivery.
- (i) Discuss a suitable method of preparation of niosomes.

3. Answer any two questions :

(2 × 10 = 20)

- (a) Write a detail note on preparation and evaluation of microspheres.
- (b) Discuss in detail the method of preparation and evaluation of liposome.
- (c) Write a detail note on aerosol preparation and its application.