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PY 132801

Roll No. of candidate

2019

B.Pharm. 8th Semester Regular End-Term Examination

PHARMACEUTICS – VII

Pharmaceutical Technology – III

Full Marks – 100 Time – Three hours

The figures in the margin indicate full marks for the questions

Question No. 1 is compulsory and answer any *six* from the rest :

1. Answer the following: (Any ten) (10 × 1 = 10)

(i) The surface topography is determined by:

(a) SEM

(b) XRD

(c) FT-IR

(d) All

(ii) The solubility obtained in acid for weakly acidic drug is called:

(a) Intrinsic solubility

(b) Extrinsic solubility

(c) Ionic solubility

(d) Micellar solubilization

[Turn over

(iii) Which of the following is correct:

(a) Metastable polymorph represents high energy state and high aqueous solubility

(b) Metastable polymorph represents low energy state and high aqueous solubility

(c) Metastable polymorph represents high energy state and low aqueous solubility

(d) None of the above.

(iv) The polarity of solvent is measured by:.

(a) Ionic strength

(b) Dielectric constant

(c) Dipole moment

(d) All of the above

(v) If a product has dose size greater than 0.5 gin, it is a

(a) Good candidate

(b) Poor candidate

(c) Both

(d) All of the above

(vi) The stress testing is conducted by changing the accelerated temperature to ———— degree increment:

(a) 5°

(b) 10°

(c) 2°

(d) All of the above

(vii) Solid state stability to oxidation is determined by exposing the atmosphere to:

(a) 100% O_2

(b) 50% O_2

(c) 40% O_2

(d) 20% O_2

(viii) The core material in microencapsulated product is of:

(a) active constituents, stabilizers. diluents, excipients and release-rate retardants or accelerators.

(b) Liquids or solids.

(c) Dispersed or dissolved material

(d) All of the above

(ix) The following form of drug is chemically more stable:

(a) Crystalline (b) Amorphous

(c) Both (d) None of the above.

(x) The preferred value for drug selection in extended release drug delivery system should be:

(a) >100 Dalton

(b) <500 Dalton

(c) <10 Dalton

(d) >500 Dalton

(xi) PEGylatian is done to improve the property of:

(a) Nanoparticles

(b) Implants

(c) Ocuserts

(d) Osmotic pump

(xii) Folding endurance is determined for:

(a) Ocuserts

(b) Transdermal patch

(c) Liposomes

(d) IUD's

2. Answer the following questions(Answer any Six out of eight questions) $(6 \times 15 = 90)$

(a) (i) Match the following: $(5 \times 1 = 5)$

A. 2 to 4 hour half life	A. Characteristic of polymer
B. Refractive index	B. Osmotic pump
C. Dielectric constant	C. Purity of substance
D. pH solubility profile	D. Measure solvent polarity
E. Parenteral controlled release	E. Sustained release

(ii) Write the importance of pre-formulation studies. (3)

(iii) Write the influence of crystal properties on bioavailability of drugs. (3)

(iv) What is Carr's Index? Give its significance? (4)

(b) (i) Outline the criteria for drug selection in extended release drug delivery systems. (4)

(ii) What are the advantages and disadvantages of Extended release drug delivery system. (5)

(iii) Explain diffusion controlled and dissolution controlled release systems. (6)

(c) (i) How will you improve the stability of liposomal formulations? Write the various application of liposomal formulation in medical science. (3+4=7)

(ii) What are resealed erythrocytes? Write its applications. (4)

(iii) Write the ideal properties of polymers for parenteral controlled release system. (4)

(d) Answer the following questions: (3+4+4+4=15)

(i) Extended release and delayed release formulation

(ii) Spray drying and spray congealing technique

(iii) Osmotic pump and its applications

(iv) Evaluation of microcapsules

(e) (i) Explain the method of drug excipient compatibility studies by DSC indicating various physical transition caused by phase changes with diagram. (6)

(ii) Outline the basic components of Transdermal Drug Delivery system. Enlist the evaluation parameters of TDDS. (5)

(iii) Name the polymers for controlled release drug delivery system. (4)

(f) (i) Outline the reason of microencapsulation. What are the basic mechanisms of drug release from microcapsules? Write the composition of core material in microencapsulation. (3+3+2=8)

(ii) Explain the steps involved in air suspension coating or wurster process. Give examples of coating materials used in this technique. (5+2=7)

(g) (i) What are the physical and chemical properties evaluated under preformulation studies? (7)

(ii) Why determination of drug partition co-efficient is necessary in pre-formulation studies? (4)

(iii) Write the application of nanoparticles in drug delivery. (4)

(h) Write short notes on: (4+4+4+3=15)

(i) Solid state stability studies

(ii) Ocuserts and its applications

(iii) IUD's and its applications

(iv) Influence of temperature on drug stability.