

- N.B.:** (1) All questions are compulsory.
 (2) Use of log table or nonprogrammable calculator is permitted.

Q.1 (a) Attempt any two of the following

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(i) Describe the following

(1) Vitamins (2) Sustained release formulations

(ii) Discuss semi-solid and liquid dosage forms of a drug.

(iii) How are the impurities introduced in pharmaceutical preparations due to presence of reagents, solvents and reaction vessels ?

(iv) What are the official methods which are used to control the quality of pharmaceutical preparations ?

(b) Discuss in brief the criteria for selection of excipients added during pharmaceutical preparations.

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OR

(b) Explain with examples, the following routes of drug administration :

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(1) Topical (ii) Rectal

Q.2 (a) Attempt any two of the following

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(i) Explain the use of GLC in the analysis of volatile impurities & residual solvents.

(ii) Discuss the tube dilution method used for analysis of vitamins.

(iii) What is the need of carrying out disintegration test of a tablet ? With a suitable diagram, describe how the test is carried out in vitro.

(iv) What is meant by impurity profiling ? Discuss various analytical techniques used to carry out impurity profiling of a drug.

(b) Define the term 'bioavailability' of a drug. How is bioavailability of a drug determined ?

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OR

(b) How are metallic impurities introduced in drug ? Describe the limit test for identification of metallic impurity like iron in pharmaceutical preparations.

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Q.3 (a) Attempt any two of the following :

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(i) Discuss method of isolation, identification & determination of cocaine from biological fluids.

(ii) How are metabolites of drugs determined in urine samples of addicts ?

(iii) What are the CNS depressants ? Explain with examples.

(iv) Describe electrophoretic method for determination of seminal stains.

(b) What is forensic science ? Describe its interdisciplinary nature.

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OR

(b) How are insecticides determined in post mortem sample of blood ?

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Q.4 (a) Attempt any two of the following:

- (i) How are total oxides of Al and Fe estimated from face powder ?
- (ii) Describe how salicylic acid & resorcinol are estimated from hair lotions.
- (iii) Give the methods for determination of chloride & sulphate from deodorants.
- (iv) What are the constituents of lipsticks? How are the colours from the lipsticks estimated ?

(b) How is propylene glycol content in cosmetics determined? State importance of propylene glycol in cosmetics.

OR

(b) Discuss how non-volatile matter in creams & lotions is determined ?

Q.5 Attempt any four of the following :

- (a) Explain the important aspects which should be considered while controlling the quality of creams used in pharmaceutical industry.
- (b) Explain the effect of rate and absorption of a drug by various routes on the drug action.
- (c) Discuss the advantages & disadvantages of parenteral route of drug administration.
- (d) Explain the need of carrying out stability studies of a pharmaceutical preparation.
- (e) How is amphetamine isolated and identified from biological fluids ?
- (f) Describe a technique used in analysis of blood stains in case of post mortem.
- (g) Distinguish between deodorants and antiperspirants.
- (h) How is water from cosmetics estimated ?

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