

N. B. : (1) All questions are compulsory.

(2) Use of log table or nonprogrammable calculator is permitted.

1. (a) Attempt any two of the following :- 8
- (i) List the different sources of impurities in pharmaceutical products. Explain any two in details.
 - (ii) Explain the terms 1) Spurious drugs 2) Adulterated drugs.
 - (iii) What is a monograph of a pharmaceutical product?
 - (iv) What are pharmacodynamic agents? Explain with examples.
- (b) State the different dosage forms in pharmaceutical formulations: Explain advantages & limitations of parenteral form. 4
- OR**
- (b) Describe different types of excipients present in tablets with proper examples. 4
2. (a) Attempt any two of the following :- 8
- (i) Describe the principle, procedure and significance of limit test for Lead.
 - (ii) What is proximate analysis? Explain the various parameters of proximate analysis.
 - (iii) Define the term disintegration. Explain two methods for disintegration studies of pharmaceutical products.
 - (iv) Discuss in detail the plate diffusion method for testing the antimicrobial activity of pharmaceutical products.
- (b) What is bioavailability? Discuss the pharmacokinetic parameters used to determine it. 4
- OR**
- (b) State and explain the different factors causing deterioration of drugs. 4
3. (a) Attempt any two of the following :- 8
- (i) How is semen and blood detected from samples in forensic laboratories?
 - (ii) Discuss the importance of analytical chemistry in field of forensic science.
 - (iii) Explain the methods for estimation of barbiturates in biological fluids.

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(iv) Elaborate the process for isolation and detection of mercury from stomach wash.

(b) Discuss the analysis of pesticides in post mortem samples. 4

OR

(b) Describe the tests for the identification of
(1) Amphetamine (2) Benzodiazepines. 4

4. (a) Attempt any two of the following :- 8

(i) Explain the terms deodorants and antiperspirants. Give the general composition of deodorants.

(ii) Describe the estimation of resorcinol in hair tonics.

(iii) What are cosmetics? Give the various functions of cosmetics.

(iv) Discuss the method for estimation of fatty acid from a sample of face powder.

(b) Describe a method for the determination of zinc in deodorants. 4

OR

(b) How are lakes and fillers determined in lipsticks? 4

5. Attempt any four of the following :- 12

(i) What is meant by long term and short term stability studies with reference to pharmaceutical preparations?

(ii) Give the methods which are commonly used for testing quality of finished products.

(iii) How is invitro dissolution test for tablets carried out? Give the significance of it.

(iv) How is HPLC applied in analysis of pharmaceutical formulations?

(v) What are narcotics? Describe detection and estimation of heroin.

(vi) How are metabolites of drugs detected in blood and urine of addicts.

(vii) Explain the process for estimation of glycerol in vanishing cream.

(viii) Give a method for determination of water content of cosmetics.

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