

- N. B. : (1) All questions are compulsory.
(2) Figures to the right indicate full marks.

1. (a) Answer the following :- 12
- (i) Methicillin can be used in penicillinase producing staphylococcal infections. Justify
 - (ii) Patients given sulphonamides are advised to drink plenty of water. Justify
 - (iii) Why do cancer cells evoke a weak immune response and go undetected.
 - (iv) Explain mechanism of action of iodides as anti-thyroid agents.
 - (v) Enlist the different types of oral contraceptives.
 - (vi) Enlist factors affecting iron absorption from gastro-intestinal tract.
- (b) Match the following :- 3
- | Drugs | Adverse effects |
|-------------------|----------------------|
| (i) Tacrolimus | (a) Ototoxicity |
| (ii) Tetracyclins | (b) Nephrotoxicity |
| (iii) Heparin | (c) Haemochromatosis |
| | (d) Thrombocytopenia |
2. (a) Write short notes on **any two** of the following :- 8
- (i) First line drugs in treatment of tuberculosis
 - (ii) Agents used to treat herpes infection
 - (iii) Extended spectrum penicillins
- (b) Attempt **any one** of the following :- 3
- (i) Justify the combination of trimethoprim and sulphamethoxazole
 - (ii) Write a short note on alkylating agents.
3. (a) Attempt **any two** of the following :- 8
- (i) Explain the process of bone remodelling. Add a note on bisphosphonates.
 - (ii) Explain mechanism of action of insulin. Discuss in brief the action of insulin on liver.
 - (iii) Write a short note on Oxytocics.
- (b) Answer **any one** of the following :- 3
- (i) Explain rationale of using vitamin D with calcium supplements.
 - (ii) Write a note on propylthiouracil
4. (a) Attempt **any two** of the following :- 8
- (i) Classify anticoagulants. Write a short note on mechanism of action and uses of heparins.
 - (ii) Discuss the physiological role of folic acid and its role in treatment of anaemia.
 - (iii) Classify anti-platelets. Add a note on clopidogrel.

- (b) Answer **any one** of the following :- 3
- (i) Explain mechanism of action and role of Vitamin K
 - (ii) Write a brief note on fibrinolytics.
5. (a) Write short notes on **any two** of the following :- 8
- (i) Azole antifungals
 - (ii) Drugs used in leprosy
 - (iii) Macrolide antibiotics
- (b) Answer any one of the following :- 3
- (i) Discuss combination therapy of antimicrobials.
 - (ii) Classify antimalarials and write a note on primaquine.
6. (a) Answer **any two** of the following :- 8
- (i) Write a short note on glucocorticoids as immuno-suppressant agents.
 - (ii) Classify oral anti-diabetic drugs. Explain mechanism of action and uses of sulphonylureas.
 - (iii) Describe treatment of hypothyroidism.
- (b) Write short notes on **any one** of the following :- 3
- (i) Vinca alkaloids in cancer
 - (ii) Metronidazole
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QP Code : 10419

(3 Hours)

[Total Marks : 70

- N.B.** (1) Question No. 1 is **compulsory**.
 (2) Attempt any **five** questions from remaining **six** questions.
 (3) Attempt **in all six** questions.

1. Answer the following questions :—

- | | |
|--|---|
| (a) Define Marketing. | 1 |
| (b) What are Patentable and Non-Patentable goods with examples. | 2 |
| (c) Define Fixed Assets and Direct Tax. | 2 |
| (d) Management is art as well as science. | 2 |
| (e) Outline of Communication Procedure. | 2 |
| (f) Define Balance Sheet. | 1 |
| (g) What is planning and its advantages. | 2 |
| (h) Differentiate between Marketing and Sales. | 3 |
| 2. (a) Explain the role of major players in Pharmaceutical Industry. | 4 |
| (b) What are different stages in PLC. | 4 |
| (c) Why Market Segmentation is essential. | 3 |
| 3. (a) Explain the concept of Six Sigma. | 4 |
| (b) Why Branding and Packaging have become important today. | 4 |
| (c) What is pricing and discuss different methods of pricing. | 3 |
| 4. (a) Explain in detail Patent Registration Procedure. | 4 |
| (b) SWOT Analysis in context to Pharmaceutical Industry. | 4 |
| (c) Write Performa of Profit and Loss Account and Balance Sheet. | 3 |
| 5. (a) Explain USFDA regulation and approval. | 4 |

OR(a) Solve the **Case Study** :—

The Balaji Hotel, located in a narrow lane in a busy locality in Hyderabad, which serves Andhra Style food has become very popular and has become very over crowded. The owner of the hotel Mr. Rajendra Reddy allowed his nephew to open a hotel in the same name in a nearby locality. The new hotel has a better building and very attractive seating arrangement. The food served in the new hotel is supplied from old hotel on a cost-plus basis. Within short while, the new hotel began to attract more customers than the original one, although the prices in the new hotel are about 20% higher than in the older one :—

- Analyse the case
- Why is the new hotel able to attract more customers.
- Do you suggest any future marketing strategy for the Balaji Hotel.

[TURN OVER

- (b) Briefly explain Stress Management. 4
- (c) What are the different elements of Pharmaceutical Industry in order to understand its working uniqueness of Medical Product Marketing. 3
-
6. (a) DPCO and its importance. 4
- (b) Short note on BCG Matrix. 4
- (c) Explain Maslow's theory of motivation. 3
7. (a) Why do conflict arises ? How would you as a manager resolves conflict. 4
- (b) Four elements of Marketing Mix. 4
- (c) Short note on 4P's. 3
-

QP Code : 10415

(3 Hours)

[Total Marks : 70

1. Answer the following :-

- | | | |
|-----|--|---|
| (a) | Give the scope of pharmaceutical Biotechnology with relevance to pharma industry. | 1 |
| (b) | Define fermentation and name the organisms used for production of penicillin. | 1 |
| (c) | Enlist the uses of Restriction Endonucleases. | 1 |
| (d) | Write the thermocyclic pattern of PCR. | 1 |
| (e) | Define Biosensor and enlist any two enzymes used for Biosensors. | 1 |
| (f) | Explain factors affecting on pathogenicity and infection. | 2 |
| (g) | What do you mean by ELISA ? | 2 |
| (h) | Write the any four applications of single cell protein. | 1 |
| (i) | Draw neat labelled structure of antibody. | 2 |
| (j) | Enlist any two examples of killed vaccines. | 1 |
| (k) | What do you mean by attenuation ? | 1 |
| (l) | Give the names of any two approved biotech derived products. | 1 |
| | | |
| 2. | (a) Write a note on rDNA technology and explain ligases role in rDNA technology. | 3 |
| | (b) Write a note on cDNA library OR gene library (with its flow chart). | 3 |
| | (c) Explain Enzyme immobilization with its advantages. | 3 |
| | (d) Comment on RIA with its Applications. | 2 |
| | | |
| 3. | (a) Elaborate on Fermentor Design. | 3 |
| | (b) Explain in detail clonal selection theory. | 3 |
| | OR | |
| | (b) Write the flow chart for Monoclonal Antibody production with its applications. | 3 |
| | (c) Give the classification of vaccines and explain subunit vaccine. | 3 |
| | (d) Draw a neat labelled diagram of fermentor. | 2 |
| | | |
| 4. | (a) Define 'Totipotency' and give pharmaceutical applications of plant tissue culture. | 3 |
| | (b) Write a note on Immobilization 'On' a support. | 3 |
| | OR | |
| | (b) Write a note on Immobilization 'In' a support. | 3 |
| | (c) Distinguish between Active and Passive Immunity. | 3 |
| | (d) Distinguish between Salk and Sabin Polio Vaccine. | 2 |

[TURN OVER

5. (a) Define Hypersensitivity and explain Type I Hypersensitivity. 3
(b) Elaborate on DNA sequencing (any on method). 3

OR

- (b) Write a short note on cosmid vector. 3
(c) Write in detailed fermentation process of dextran production. 3
(d) Draw the flow chart for insulin production by rDNA technology. 2

6. (a) Add a short note on BCG vaccine production. 3
(b) What do you mean by stem cell culture ? Give its applications. 3
(c) Enlist types of fermentor and explain any on type in detail. 3

OR

- (c) Explain in detail any three factors affecting on fermentation process. 3
(d) Comment on recent trends in vaccines. 2

QP Code : 10412

(3 Hours)

[Total Marks : 70

- N.B.** (1) All questions are compulsory.
(4) Figures to the right indicate marks.

1. (a) Give the functional classification of skin creams. 2
(b) Give an account of etiology of acne condition and name any two anti-acne agents. 3
(c) Write a note on cuticle softeners. 2
(d) What is mechanism of action of hair strengtheners ? 2
(e) Discuss the formulation of dry shaving preparations. 3
(f) Give a typical formulation of mouthwash with role of each ingredient. 3
2. (a) Elaborate on sensitivity testing of hair dyes and eye makeup products. 4
(b) Discuss the aspects of formulation of cleansing lotions. 3

OR

(b) Give the properties of face packs. How do the raw materials fulfill these properties ? 3
(c) Elaborate on large scale manufacturing of shampoos along with equipments used. 4
3. (a) Classify various shaving preparations and discuss the formulation of lather shaving creams. 4
(b) Name eye makeup preparations. Describe in brief eye shadow formulation. 3
(c) Write a short note on herbal cosmetics. 4

OR

(c) Explain the advantages of colours and antioxidants in cosmetics. 4
4. (a) Enlist types of rouge and discuss any one type. 3

OR

(a) Give an account of manufacturing of compact face powders. 3
(b) Write a short note on hair colorants. 4
(c) Describe the quality control tests and BIS standards for toothpastes. 4
5. (a) Give classification of depilatories with examples. Write the mechanism of action of depilatories. 3
(b) Describe with the help of a neat diagram packaging of lipsticks. 4

OR

(b) Enumerate the various tests on lipsticks. 4
(c) Discuss the sources and prevention of microbial contamination in cosmetics. 4

6. (a) What is the mechanism of working of anti-perspirants ? Give suitable examples. 3

OR

(a) Write a note on baby toiletries. 3

(b) Give the ideal properties of nail lacquers. Judicious mixture of solvents is required in nail lacquer formulations. Justify. 4

(c) What are the harmful effects of sunlight ? How do suscreens protect the skin from these effects ? 4

QP Code :10409

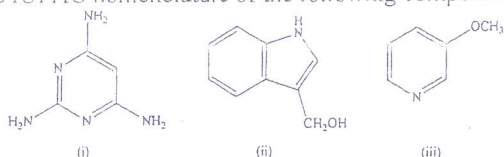
(2½ Hours)

N.B.: 1. All Questions are compulsory

Total Marks: 70

2. Figures to right indicate full marks

Q1. A. Give the IUPAC nomenclature of the following compounds (03)



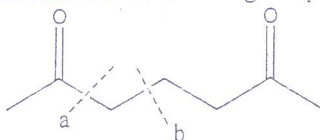
B. Define following terms: (i) pericyclic reaction (ii) retrosynthesis (iii) sterol (iv) E-factor (v) green chemistry (05)

C. Justify the statement: Imidazole is stronger base than pyridine (02)

D. Draw general structure of estrogen. Explain the numbering, ring letters and stereochemistry of ring junction (03)

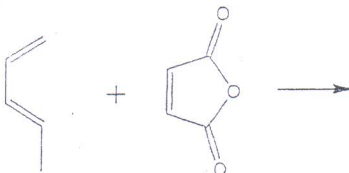
E. Give any one reaction catalyzed by hydrotalcite (01)

F. Which mode will you prefer for disconnection of following compound? Justify (01)



Q2. A. Explain the mechanism for (a) Skraup synthesis and (b) Reissert synthesis (04)

B. Complete the following reaction (01)



C. On standing, cyclopentadiene spontaneously forms dicyclopentadiene from which it can be regenerated by heating. What reaction has taken place (a) In the formation of dicyclopentadiene (b) In the regeneration of cyclopentadiene? (03)

D. Explain catalytic oxidation reaction with two examples (03)

OR

Give an application of enantioselective catalysis. Explain with the help of example.

Q3. A. Give mechanism for the following reactions: (04)

i) Radiszewskii reaction and ii) synthesis of pyrimidine using malonic ester

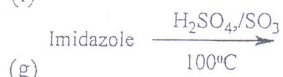
B. Design the retrosynthetic scheme and synthesis for benzocaine (04)

C. Explain the classical and catalytic route for amino acid ester synthesis (03)

Q4. A. Justify, Electrophilic substitution of pyrrole is preferred at α - over β -position (02)

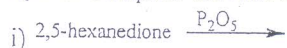
B. Complete the reactions (any Six) (06)





C. Discuss the thermal cyclization of 2,4-hexadiene using all possible stereoisomers. (03)

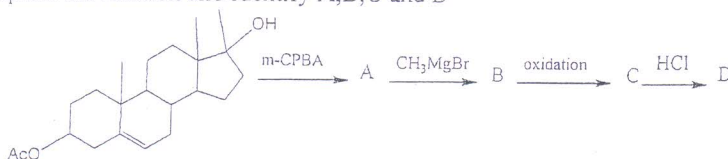
Q5. A. Complete the following reactions (03)



B. Draw all possible products obtained from oxidation of isoquinoline (03)

C. Draw resonating structures for imidazole (01)

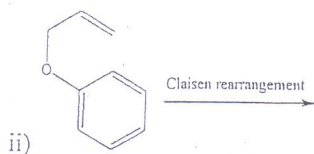
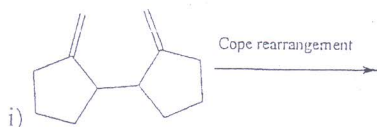
D. Complete the reaction and identify A, B, C and D (04)



Q6. A. Give suitable explanation for the following statements (any four) (04)

- Electrophilic substitution of furan is easier than benzene
- Imidazole is more acidic than pyrrole
- Protonation of nitrogen atom present in pyridine ring is easier than pyrrole
- Electrophilic substitution of isoquinoline takes place at 5th and 8th position
- Thiophene does not undergo Diels Alder reaction

B. Predict the products for the following reactions with mechanism (04)



C. Discuss the disconnection approach used for synthesis of 2-phenylethanol (03)