Reg. No.										

MANIPAL ACADEMY OF HIGHER EDUCATION

THIRD YEAR PHARM D. DEGREE EXAMINATION – JULY 2018

SUBJECT: PQA 3.2T: PHARMACEUTICAL ANALYSIS

(2014 REGULATION)

Thursday, July 19, 2018

Time: 10:00 – 13:00 Hrs. Max. Marks: 70

✍ **Answer ALL questions.**

✍ **Draw chemical reactions and neatly labelled diagrams wherever necessary.**

✍ **Long answer questions:**

1. With the help of a neatly labeled diagram, describe in detail the double beam UV-Visible spectrophotometer.

2. Name HPLC column efficiency parameters and write the equation to calculate resolution. Explain the construction and working of RI detector of HPLC.

3. Describe the principle of amperometric titrations. Explain titration of electro reducible ion vs non reducible ion.

(10 marks × 3 = 30 marks)

4. **Short answer questions:**

4A. List the applications of fluorimetry.

(5 marks)

4B. Explain the types of vibrations in a molecule.

(5 marks)

4C. i) Explain the principle of ESR spectroscopy.
ii) Explain the theory of mass spectrometry.

(2+3 = 5 marks)

4D. Write the advantages of TLC as separation technique over other methods.

(5 marks)

4E. Differentiate calibration and validation.

(5 marks)

4F. Explain the instrumentation of AAS in brief.

(5 marks)

5. **Short answer questions:**

5A. Explain the theory of flame photometry.
5B. Write a brief note on "ICH guidelines".
5C. Write the applications of AES.
5D. Explain the principle of thermal methods in brief.
5E. Write and explain the Bragg's law.

(2 marks × 5 = 10 marks)

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MANIPAL ACADEMY OF HIGHER EDUCATION

THIRD YEAR PHARM D. DEGREE EXAMINATION – JULY 2018

SUBJECT: PD 3.2: PHARMACEUTICAL ANALYSIS

Thursday, July 19, 2018

Time: 10:00 – 13:00 Hrs. Max. Marks: 70

- **Answer ALL questions.**
- **Draw neatly labeled diagram wherever necessary.**

- **Long Essay:**

1A. Define ISO 9000 and list its benefit. Mention the quality management principle of ISO 9000.

1B. Explain the conductometric titration for the mixture of strong acid and weak acid vs strong base.

(5+5 = 10 marks)

2. Explain the construction and working of UV-Visble spectrophotometer.

(10 marks)

3A. Explain the rate theory of chromatography with its advantages and disadvantages.

3B. Explain the instrumentation of HPLC in brief.

(5+5 = 10 marks)

4. **Short Essay:**

4A. Explain the construction and working of Katharometer and flame ionization detectors in brief.

(5 marks)

4B. Explain the molecular factors affecting intensity of fluorescence.

(5 marks)

4C. i) What is half wave potential? Explain briefly.
ii) Explain the principle of atomic absorption spectroscopy.

(3+2 = 5 marks)

4D. i) Write the theory of proton NMR.
ii) What is Bragg's law for Diffraction?

(3+2 = 5 marks)

4E. Write the applications of IR spectroscopy.

(5 marks)

4F. i) Write the importance and types of statistical Quality control chart.
ii) What is differential scanning calorimeter? Mention its types.

(3+2 =5 marks)

5. **Short answer:**

5A. Differentiate potentiometric and conductometric titrations.

5B. Name the components of flame photometer.

5C. Mention the ionization methods in Mass spectroscopy.

5D. Write the schematic diagram of inductively coupled plasma source.

5E. What are polarimeter and specific optical rotation?

(2 marks × 5 = 10 marks)

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MANIPAL ACADEMY OF HIGHER EDUCATION

THIRD YEAR PHARM D. DEGREE EXAMINATION – JULY 2018

SUBJECT: PCH 3.5T: MEDICINAL CHEMISTRY

(2014 REGULATION)

Friday, July 27, 2018

Time: 10:00 – 13:00 Hrs. Max. Marks: 70

✍ **Answer ALL the question.**

✍ **Long answer questions:**

1A. Classify antiarrythmic drugs. Write the structure and synthesis of lidocaine.
1B. Write the synthesis of glibenclamide.
1C. Write the structure of frusemide and give its uses.

(5+3+2 = 10 marks)

2A. Classify antiviral agents by giving one structure under each class. Write briefly on Anti HIV drugs.
2B. Explain the salient structural requirement for compounds used as DHFR inhibitors. Outline the synthesis of any one of them as antimalarial agent.

(7+3 = 10 marks)

3A. Write the synthesis for the following: i) Chloramphenicol ii) PAS
3B. What are Radio diagnostic agents? Classify them by giving example. Outline the synthesis of Diethyl Stilbestrol.

(5+5 = 10 marks)

4. **Short answer questions:**

4A. What are Anthelmintics? Classify Benzimidazole derivatives. Outline the synthesis of Mebendazole.
4B. Write the SAR for Sulpha drugs and Quinolones.
4C. What are osmotic diuretics? How do they act? Write the structure of any one osmotic diuretics.
4D. Classify anticancer agents by giving one structure under each class. Outline the synthesis for chlorambucil.
4E. How do you synthesise glibenclamide? Give chemical reaction.
4F. Write the chemistry for the Macrolide and Amino Glycosides Antibiotics.

(5 marks × 6 = 30 marks)

5. **Give reasons for the following:**

5A. Penicillinase inhibitors are not antibacterial agents.
5B. Calcium channel blockers are used as antianginal agents.
5C. Carbimazole is an antithyroid drug.
5D. Benzyl penicillin is not administered orally.
5E. Benorylate is a Mutual Prodrug.

(2 marks × 5 = 10 marks)