Reg. No.										

MANIPAL UNIVERSITY

FIRST YEAR B. PHARM. DEGREE EXAMINATION – MAY 2016

SUBJECT: ANATOMY AND PHYSIOLOGY (PHA 102T)

(2014 REGULATION)

Wednesday, May 04, 2016

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

✍ **Answer ALL the questions.**

✍ **Long answer questions:**

1. Explain the innervations of heart and blood vessels. What are the stimulatory effects of those innervations? Discuss the neural mechanisms of blood pressure regulation.

(3+3+4 = 10 marks)

2. Compare and contrast the skeletal, cardiac and smooth muscles.

(10 marks)

3. Discuss the hormonal regulation of spermatogenesis and oogenesis. List the secondary sexual changes in male and female.

(8+2 = 10 marks)

4. **Short answer questions:**

4A. With a flow chart explain the formation of blood cells.

(5 marks)

4B. Describe the anatomy of stomach and explain how it contributes to digestion of food.

(5 marks)

4C. Discuss any five functions of hypothalamus.

(5 marks)

4D. Explain the formation, circulation and functions of cerebrospinal fluid.

(5 marks)

4E. Compare somatic and autonomic nervous systems.

(5 marks)

4F. What is laparoscopy? What are its advantages? Explain any three contraceptive devices.

(1+1+3 = 5 marks)

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

5A. Blood clotting is a positive feedback mechanism.

5B. Smell or the thought of delicious food stimulates the salivary secretion.

5C. When ventilation increases, the pH of some body fluids increases.

5D. Crying causes the running nose.

5E. In human being generally the males have a deep voice, facial and chest hair compared to females.

(2 marks × 5 = 10 marks)

Reg. No.										

MANIPAL UNIVERSITY

FIRST YEAR B. PHARM. DEGREE EXAMINATION – MAY 2016

SUBJECT: BIOCHEMISTRY (PBT 103T)
(2014 REGULATION)

Friday, May 06, 2016

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

✍ **Answer ALL the questions.**

✍ **Long Essay Questions:**

1. Explain the reactions occuring in aerobic glycolysis. Give an account of ATP's generated in the process.

2. Explain in detail the β-Oxidation of Palmitic acid with a note on its energetics.

3. Explain transcription process with respect to prokaryotes. Add a note on post transcriptional modifications.

(10 marks × 3 = 30 marks)

4. **Short Essay Questions:**

4A. Enlist the factors affecting enzyme activity. Write in detail on any two of the factors.

4B. Define K_m. Write short notes on enzyme kinetics.

4C. Write short notes on the characteristics associated with acute intermittent porphyria and porphyria cutanea tarda.

4D. Explain the steps involved in degradation of tyrosine.

4E. Write the biochemical functions and deficiency symptoms associated with the following:
i) Vitamin C ii) Vitamin B_2

4F. Sketch the catabolism of purine ribonucleotides. Add a note on tophi.

(5 marks × 6 = 30 marks)

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

5A. Membrane is referred as fluid mosaic model.

5B. Free energy change becomes zero at equilibrium.

5C. Unconjugated bilirubin gives a positive van den Bergh test on addition of alcohol.

5D. Cause for black urine disease.

5E. G6PD deficiency causes hemolytic anemia and resistance to malaria.

(2 marks × 5 = 10 marks)

Reg. No.										

MANIPAL UNIVERSITY

FIRST YEAR B. PHARM. DEGREE EXAMINATION – MAY 2016

SUBJECT: PHARMACEUTICAL ANALYSIS-I (PQA 104T)
(2014 REGULATION)

Monday, May 09, 2016

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

- **Answer ALL the questions.**
- **Write balanced chemical reactions and draw neatly labelled diagrams wherever necessary. Use of scientific calculater is allowed.**

Long answer questions:

1. Enlist and explain any five methods of concentration expression in quantitative analysis.

(10 marks)

2. Write a short note on "indicator errors" in neutralization titration.
In the titration of 0.1M hydrochloric acid against 0.1M sodium hydroxide, if methyl red (pT = 5.5) is used as an indicator, calculate the indicator error involved, state whether methyl red is a suitable indicator or not.

(10 marks)

3A. Why oxidation with permanganate in acid solution is generally used in volumetric analysis than that of either neutral or alkaline solution? Explain.

3B. Define equivalent weight of oxidising agent. Explain the methods to calculate the same with suitable example.

(5+5 = 10 marks)

4. **Short answer questions:**

4A. What are pM indicators? Write the requirements for the same.

(5 marks)

4B. Explain the principle of assay of sodium chloride by Mohr's method.

(5 marks)

4C. Explain the four types of co-precipitation in brief.

(5 marks)

4D. Explain the theory of assay of a mixture of sodium hydroxide and sodium carbonate.

(5 marks)

4E. i) Name the solvent, titrant and indicator used for assaying weakly acidic and weakly basic drug by non-aqueous titrations.

ii) Explain the equivalence point detection in diazotization titration.

(3+2 = 5 marks)

4F. i) Explain the principle of limit test for chloride.

ii) How the method of manufacture may introduce new impurities in to the final product?

(3+2 = 5 marks)

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

5A. Write the pharmaceutical applications of argentometric titrations.

5B. What are the quantitative solubility expression terms for freely soluble and slightly soluble as per Indian Pharmacopoeia 2014?

5C. Why potassium thiocyanate and potassium iodide are used in the estimation of copper sulphate by iodometric method?

5D. Why weakly basic drugs are assayed by non-aqueous titration?

5E. Why lead acetate is cotton used in limit test for arsenic?

(2 marks × 5 = 10 marks)

Reg. No.										

MANIPAL UNIVERSITY

FIRST YEAR B. PHARM. DEGREE EXAMINATION – MAY 2016

SUBJECT: PHARMACEUTICAL INORGANIC CHEMISTRY (PCH 104)

(CREDIT BASED SYSTEM)

Monday, May 09, 2016

Time: 10:00 – 13:00 Hrs. Max. Marks: 50

✍ **Answer ALL the questions.**

✍ **Long Essays:**

1A. Give the storage conditions and labeling of nitrous oxide.

1B. Write the principle involved in the limit test for Arsenic with reactions.

(3+5 = 8 marks)

2A. Explain the method of preparation and assay of Borax.

2B. How will you assay Stannous Fluoride?

2C. Give the storage conditions and uses of Silver nitrate.

(4+2+2 = 8 marks)

3A. Classify gastrointestinal agents with examples.

3B. Explain in detail the method of preparation and assay of calcium gluconate.

(4+4 = 8 marks)

4. **Short Essays:**

4A. Explain how the reaction vessels, raw materials and solvents act as sources of impurities.

4B. Give the method of preparation and assay of Sodium iodide.

4C. Define adsorbents and protectives giving examples. Mention their therapeutic uses.

4D. How will you prepare activated charcoal? Give its uses.

(4 marks × 4 = 16 marks)

5. **Short Answers:**

5A. Mention any two reasons for Hyponatremia

5B. Mention any two side effects of antacids

5C. Give the physiological role of Manganese

5D. Give the uses of Selenium sulphide

5E. Name two instruments used in the measurement of radioactivity

(2 marks × 5 = 10 marks)

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MANIPAL UNIVERSITY

FIRST YEAR B. PHARM. DEGREE EXAMINATION – MAY 2016

SUBJECT: PHARMACEUTICAL ORGANIC CHEMISTRY (PCH 105T)

(2014 REGULATION)

Wednesday, May 11, 2016

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

✍ **Answer ALL the questions.**

✍ **Long answer questions:**

1A. What is Michael addition reaction? Explain.

1B. Discuss with mechanism, nitration of bromobenzene.

(3+7 = 10 marks)

2A. What is Perkin condensation? Explain with mechanism.

2B. Explain Markownikov's addition with mechanism.

(5+5 = 10 marks)

3A. Explain the following:

i) Polarity of the bond ii) Electronegativity

3B. Explain four methods of the separation of a racemic mixture.

(6+4 = 10 marks)

4. **Short answer questions:**

4A. Explain the methods of preparation of alkanes.

4B. Write a note on resonance.

4C. Explain the reactions of alcohols.

4D. Differentiate between E1 and E2 mechanism. Give any two evidences for each reaction.

4E. Explain the Bimolecular displacement mechanism for Nucleophilic Aromatic Substitution.

4F. Give the specific use of the following reagents in organic synthesis:

i) Lithium aluminium hydride ii) Aluminium tertiary butoxide

(5 marks × 6 = 30 marks)

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

5A. Tertiary and secondary alkyl halides are the best substrates for S_N1 reactions.

5B. Phenols are more acidic than alcohols.

5C. Strong base is used in E2 reactions.

5D. Water has higher dipole moment than ammonia.

5E. S_N2 nucleophilic substitution causes inversion of configuration.

(2 marks × 5 = 10 marks)

Reg. No.										

MANIPAL UNIVERSITY

FIRST YEAR B. PHARM. DEGREE EXAMINATION – MAY 2016

SUBJECT: PHARMACEUTICAL ORGANIC CHEMISTRY (PCH 105)
(CREDIT BASED SYSTEM)

Wednesday, May 11, 2016

Time: 10:00 – 13:00 Hrs. Max. Marks: 50

✍ **Answer ALL the questions.**

✍ **Long Essays:**

1. Explain the following with reaction mechanism

1A. Kolbe's reaction

1B. Aldol condensation

(4+4 = 8 marks)

2. Give any two methods of preparations and reactions of the following:

2A. Alcohol

2B. Amine

(4+4 = 8 marks)

3A. What are Carbocations? Give the methods of their generation with applications.

3B. Explain the methods of preparation and assay of Benzocaine.

(4+4 = 8 marks)

4. **Short Essays:**

4A. Give reasons for the following with suitable examples:

i) Reactivity in dehydration of alcohols follows the order, $3^0 > 2^0 > 1^0$

ii) S_N2 reaction proceeds with complete stereochemical inversion

(2+2 = 4 marks)

4B. i) Write a note on geometrical isomerism.

ii) Discuss the methods used to distinguish geometrical isomers.

(2+2 = 4 marks)

4C. Discuss the stability of allyl radical.

(4 marks)

4D. Explain the mechanism of Friedel-craft's acylation of benzene.

(4 marks)

5. **Short Answers:**

5A. How will you convert benzene into

i) m-bromonitrobenzene ii) o-bromonitrobenzene and p- bromonitrobenzene

5B. Compare the basicity of Pyridine with Pyrrole.

5C. State Markovnikov's rule of addition.

5D. Give the structure and medicinal uses of glycerine.

5E. Give the specific uses of Aluminium t-butoxide with suitable examples.

(2 marks × 5 = 10 marks)

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MANIPAL UNIVERSITY

FIRST YEAR B. PHARM. DEGREE EXAMINATION – MAY 2016

SUBJECT: PHARMACOGNOSY-I (PCO 106T)

(2014 REGULATION)

Friday, May 13, 2016

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

✍ **Answer ALL the questions.**

✍ **Long answer questions:**

1. Describe the morphology and microscopy of leaf.

(10 marks)

2. Define tannins. Classify them with examples. Give important identification tests for tannins.

(10 marks)

3A. Basic principles involved in Ayurvedic system of medicine.

3B. Give brief account on Bhasma and Taila.

(6+4 = 10 marks)

4. **Short answer questions:**

4A. Give source, chemical constituents and uses of Agar and Isapgol

4B. Describe biological evaluation of crude drugs

4C. Fertilizers and manures used in cultivation of crude drugs

4D. Short note on serotaxonomical classification

4E. What are trichomes? Classify them with examples

4F. Write a note on Spermaceti and Chaulmoogra oil

(5 marks × 6 = 30 marks)

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

5A. Gums are unorganized crude drugs

5B. Pharmacological classification of crude drugs is confusing

5C. Acid value is important for the evaluation of fixed oils

5D. Shark liver oil is stored in amber coloured bottles

5E. Tragacanth does not answer Ruthenium red test

(2 marks × 5 = 10 marks)

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MANIPAL UNIVERSITY

FIRST YEAR B. PHARM. DEGREE EXAMINATION – MAY 2016

SUBJECT: ENVIRONMENTAL SCIENCE AND ETHICS (PMA 107T)
(2014 REGULATION)

Monday, May 16, 2016

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

✍ **Answer ALL the questions.**

✍ **Long answer questions:**

1. What is meant by biodiversity? Enlist three levels of biodiversity. Discuss in detail biogeographical classification of India and India as a mega-diversity nation.
2. How can we move from unsustainable to sustainable development? What are the causes of unsustainable development? Discuss climate change and its impact.
3. How might the consumer-oriented model of medical practice affect both a health care professional's ethical obligations to his or her patients and a patient's rights to health care in the future?

(10 marks × 3 = 30 marks)

4. **Short answer questions:**

4A. What is Kantianism? Write a brief note.

4B. What are Natural law theories? Briefly explain.

4C. What is meant by Natural Resources? Schematically differentiate natural resources. Add a brief note on non-renewable natural resources.

4D. Define and discuss what is meant by an ecosystem. What is the composition of animal and plant species in an ecosystem? Briefly write how ecosystem works.

4E. Write a note on Causes, Effects and Control of Air Pollution.

4F. How Value education in terms of environment can be provided to individuals?

(5 marks × 6 = 30 marks)

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

5A. How ethical codes in health care have evolved?

5B. List various codes of ethics.

5C. What are legal responsibilities of a healthcare provider?

5D. Moral obligation.

5E. Scope of environmental studies. Enlist two major points.

(2 marks × 5 = 10 marks)