

MANIPAL UNIVERSITY**FIRST YEAR PHARM D. DEGREE EXAMINATION – APRIL/MAY 2012****SUBJECT: PD 1.1: HUMAN ANATOMY AND PHYSIOLOGY**

Wednesday, May 02, 2012

Time: 10:00 – 13:00 Hrs.

Max. Marks: 70

✍ **Answer all the questions.**

✍ **Long essays:**

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. Enumerate the male sexual hormones. Explain the hormonal regulation of spermatogenesis. Discuss the secondary sexual changes in male and female.
(2+4+2+2 = 10 marks)

4. Short Essays:

- 4A. With a flow chart explain the formation of blood cells.
(5 marks)
- 4B. Explain how the stomach contributes for digestion of food.
(5 marks)
- 4C. Enumerate the functions of hypothalamus. Explain how it regulates the autonomic nervous system.
(3+2 = 5 marks)
- 4D. Explain the formation, circulation and functions of cerebrospinal fluid.
(1+3+1 = 5 marks)
- 4E. Discuss about renin angiotensin aldosterone mechanism for regulation of minerals and fluids in the body.
(5 marks)
- 4F. What is laparoscopy? What are its advantages? Explain any three contraceptive devices.
(1+1+3 = 5 marks)

5. Short Answers:

- 5A. Outline the autonomic innervations of eye.
- 5B. Enumerate the respiratory muscles.
- 5C. What are the two main differences between females and males in sports performance?
- 5D. Enumerate the functions of skin.
- 5E. Why does the clotting cascade confine to the place of injury?
(2×5 = 10 marks)



MANIPAL UNIVERSITY

FIRST YEAR PHARM D. DEGREE EXAMINATION – APRIL/MAY 2012

SUBJECT: PD 1.3: MEDICINAL BIOCHEMISTRY

Friday, May 04, 2012

Time: 10:00 – 13:00 Hrs.

Max. Marks: 70

✍ **Answer all the questions.**

✍ **Long Essays:**

1. Explain the phosphorylation steps in glycolysis. Mention the role of coenzymes and generation of ATP in these steps.
2. With the help of a neat labeled diagram, explain DNA replication in prokaryotes.
3. Explain the steps involved in β -oxidation of palmitic acid with a note on its energetics.
(10×3 = 30 marks)

4. **Short Essays:**

- 4A. Write a note on the regulation, energetics and metabolic disorders associated with Urea cycle.
- 4B. Enlist the factors affecting enzyme activity. Explain the role of temperature and pH.
- 4C. Schematically represent electron transport chain. Add a note on uncouplers.
- 4D. Mention the functions of liver. Explain the Vanden Bergh test for detecting different types of liver dysfunction.
- 4E. Draw the structure of cholesterol and explain the principle involved in the estimation of total cholesterol.
- 4F. Explain the test for determination of chloride in body fluids. Add a note on clinical significance of chloride.
(5×6 = 30 marks)

5. **Short Answers.**

- 5A. Give the structure of IMP and mention the contributors of the purine ring in *De novo* synthesis.
- 5B. Mention about
 - i) Decarboxylation reaction
 - ii) Transamination reaction
- 5C. Illustrate the intermediate step that links EMP to TCA cycle.
- 5D. What is apoptosis?
- 5E. Expand RIA. Mention its applications.
(2×5 = 10 marks)



MANIPAL UNIVERSITY

FIRST YEAR PHARM D. DEGREE EXAMINATION – APRIL/MAY 2012

SUBJECT: PD 1.5: PHARMACEUTICAL INORGANIC CHEMISTRY

Monday, May 07, 2012

Time: 10:00 – 13:00 Hrs.

Max. Marks: 70

✍ **Answer all questions.**

✍ **Long essay:**

- 1A. Explain the role of fluorides in the treatment of dental caries.
 1B. Give the preparation and assay of sodium fluoride.
 1C. Define electrolyte combination therapy and give the composition of ORS powder. (3+4+3 = 10 marks)
- 2A. Explain the preparation, assay and use of Ferric ammonium citrate.
 2B. Explain the neutralization curve for strong acid Vs strong base titrations. Which type of indicator is suitable for such titrations? ((2+2+1)+5 = 10 marks)
- 3A. Classify antacids. What are the advantages of non-systemic antacids over systemic antacids?
 3B. Explain two methods of preparation and assay of Aluminium hydroxide. ((2+2)+(4+2) = 10 marks)

4. Short essay:

- 4A. Explain the steps involved in the precipitation titrations. (5 marks)
- 4B. Give the principle and reactions involved in the limit test for Iron. (4+1 = 5 marks)
- 4C. Give the preparation, assay and uses of sodium thiosulphate. (2+2+1 = 5 marks)
- 4D. Explain the quinonoid theory of indicators with suitable example. (5 marks)
- 4E. Give the preparation, assay and use of Boric acid. (2+2+1 = 5 marks)
- 4F. What is cathartic? Give the preparation and assay of Epsom salt. (1+2+2 = 5 marks)

5. Short answers:

- 5A. Define oral antiseptic and astringent with one example each.
 5B. What is the purpose of using lead acetate cotton in the limit test for Arsenic? Give the reaction equation.
 5C. Give four applications of radiopharmaceuticals.
 5D. Define accuracy and precision.
 5E. What are the advantages of non-aqueous titrations? (2×5 = 10 marks)



MANIPAL UNIVERSITY
FIRST YEAR PHARM D. DEGREE EXAMINATION – APRIL/MAY 2012
SUBJECT: PD 1.4: PHARMACEUTICAL ORGANIC CHEMISTRY

Wednesday, May 09, 2012

Time: 10:00 – 13:00 Hrs.

Max. Marks: 70

✍ **Long Essays:**

- 1A. Explain the acidity of carboxylic acids and effect of substituents on the acidity of carboxylic acids.
- 1B. Give the reaction and mechanism for conversion of acid chlorides to ester. (5+5 = 10 marks)

- 2A. Explain the concept of electron release based on resonance.
- 2B. Give the mechanism of Reimer Teimann reaction. (5+5 = 10 marks)

3. Give method of preparation and uses of following:
- i) Paraldehyde ii) Saccharine sodium iii) Lactic acid iv) Mephensin. (2½×4 = 10 marks)

4. Short Essays:

- 4A. Write a note on hyperconjugation and effects of hyperconjugation.
- 4B. Explain the mechanism of side chain halogenation of alkyl benzenes.
- 4C. Explain three major evidences for E₂ reactions.
- 4D. Explain Bayers strain theory of cycloalkanes.
- 4E. How will you convert benzene diazonium chloride to Para hydroxy azobenzene .
- 4F. Explain Fries rearrangement with mechanism. (5×6 = 30 marks)

5. Short Answers:

- 5A. Write the structural formula of i) 5, 5 dimethyl - 2 - hexene ii) Ethyl ethanoate
- 5B. Give the resonance structures of allyl radical.
- 5C. Indicate the order of reactivity of alkyl halides in SN₁ reactions.
- 5D. Name the electrophiles generated in nitration and sulphonation of benzene.
- 5E. How will you assay Salicylic acid? (2×5 = 10 marks)



MANIPAL UNIVERSITY

FIRST YEAR PHARM D. DEGREE EXAMINATION – APRIL/MAY 2012

SUBJECT: PD 1.2: PHARMACEUTICS

Friday, May 11, 2012

Time: 10:00 – 13:00 Hrs.

Max. Marks: 70

✍ **Answer ALL the questions.**

✍ **Long Essay:**

1. What is percolation? Explain the percolation process in detail.
2. Define and classify Monophasic liquid dosage forms. Write the principle involved in the preparation of strong solution of ammonium acetate or cresol with soap solution.
3. What is a Pharmacopoeia? Trace out the historical development of I.P. Mention the salient features of latest edition of I.P.

(10×3 = 30 marks)

4. Short Essay:

- 4A. Prepare 4500ml of 10%w/v dextrose solution from 50%w/v and 5%w/v of dextrose solution.
- 4B. How do you differentiate O/W and W/O type of emulsion?
- 4C. What are the advantages and disadvantages of cocoa butter as suppository base?
- 4D. Discuss physical incompatibility with examples.
- 4E. Write a short note on absorbable gelatin sponge.
- 4F. Define prescription. Explain the handling of prescription.

(5×6 = 30 marks)

5. Short Answer:

- 5A. Write the salient features of surgical dressing materials.
- 5B. Define posology. Give young's formula.
- 5C. Write a note on toothpowder.
- 5D. State Stoke's law of sedimentation.
- 5E. Give the formula for Calamine lotion I.P.

(2×5 = 10 marks)



Manipal College of Pharmaceutical Sciences
Manipal University, Manipal
First year Pharm. D- Annual Examinations-April 2012
Subject: PD 1.6. Remedial Mathematics

Date: 27-04-2012

Time: 10.00 am – 01.00 pm.

Max. Marks: 70

Answer ALL the questions. Use log tables If required.

I. Long Essay. 3×10 = 30 Marks

1A. State, with reason, whether the straight lines $2y = 6x - 5$ and $9x - 3y = 5$ are parallel or not. (2 Marks)

1B. Determine the equation of the straight line passing through the two points $(1, 4)$ and $(-2, 7)$. If the point $(2a, 5 + a)$ lies on this line, find the value of a . (4 Marks)

1C. Find AB , where $A = \begin{bmatrix} 1 & 0 & 0 \\ 1 & 2 & 0 \\ 3 & 5 & 8 \end{bmatrix}$ and $B = \begin{bmatrix} 0 & 1 & 1 \\ -1 & 0 & -3 \\ -1 & 3 & 0 \end{bmatrix}$. (4 Marks)

2A. Show that $f(x)$ is continuous at $x = 3$: (4 Marks)

$$f(x) = \begin{cases} \frac{x^2 - 2x + 15}{x - 3} & x < 3 \\ x^2 - 1 & x \geq 3 \end{cases}$$

2B. Solve (6 Marks)

$$\begin{aligned} x + y + 2z &= 5 \\ x - y - z &= 2 \\ x + 2y - z &= 2 \end{aligned}$$

3A. Find the centre and radius of the circle having the equation $x^2 + y^2 - 6x + 2y - 6 = 0$. (4 Marks)

3B. Find the characteristic equation of $A = \begin{bmatrix} 2 & 1 \\ 1 & -3 \end{bmatrix}$, and verify (6 Marks)

Cayley-Hamilton theorem for A .

(PTO)

Manipal College of Pharmaceutical Sciences, Manipal University
Department of Pharmacognosy
First year Pharm D,
Annual Examination, April-May, 2012

Subject: Remedial Biology

Date : 27-04-2012

Time : 10.00 – 13.00 hrs.

Subject Code: P.D. 1.6

Max. Marks = 70

Answer all the Questions with neat labeled diagrams wherever necessary:

I. Long Essays**(3 x 10 = 30 Marks)**

1. Write the important characters of Cryptogams and Phanerogams. Explain classification with schematic representation.
2. Describe the external and internal structure of the frog heart and explain the mechanism of its functioning.
3. a) What are the underground modifications of stems? Describe each with three examples.
b) Briefly explain about hypogynous, perigynous and epigynous flowers.

II. Short Essays**(6 x 5 = 30 Marks)**

4. Explain the digestive system of frog with a special note on its physiology of digestion.
5. What are plant tissues? Mention the characters of different types of simple permanent tissues.
6. Write the characters of class Mammalia.
7. Sketch any two diagrams for different types of
(a) Leaf bases (b) Leaf shapes (c) Leaf margins (d) Leaf apices
8. What is growth and mention the factors responsible for promoting the growth of plants?
9. Describe the characters of Pisces. Write short note on shark liver oil and cod liver oil.

III. Short Answers**(5 x 2 = 10 Marks)**

10. Define the term fruit. Briefly mention classification.
11. Draw and label the V.S. of skin of frog.
12. Define root and label different parts.
13. Draw and label uriniferous tubule of frog.
14. Define ergastic substances of plants. Name different types.