MANIPAL UNIVERSITY

FIRST YEAR B. PHARM. DEGREE EXAMINATION - JULY 2017
SUBJECT: ANATOMY AND PHYSIOLOGY (PHA 102T)
(2014 REGULATION)
Monday, July 17, 2017 (10.00 - 13.00 Hrs.)

Marks: 70   **Duration: 180 mins.**

Answer ALL the questions.

1)   Describe the microscopic anatomy of a skeletal muscle fiber. With a   (10)
        schematic diagram, explain the structure of a sarcomere.
        (6+4 = 10 marks)

2)   Explain the various physiological roles of kidney. Write a note on RAAS (10)
        pathway.
        (4+6 = 10 marks)

3)   Discuss the mechanisms of action of lipid-soluble hormones. Name any (10)
        two lipid-soluble hormone, their site of secretion and functions.
        (5+2+1+2 = 10 marks)

4. Short answer questions:

4A)   What is hemostasis? Describe the various stages of hemostasis.   (5)
        (1+4 = 5 marks)

4B)   Write the major functions of lymph. Explain the formation and flow of   (5)
        lymph.
        (3+2 = 5 marks)

4C)   Explain the process of digestion and absorption of lipid from intestine. (5)

4D)   Define various lung volume and lung capacity.   (5)

4E)   Discuss the stages of female reproductive cycle.   (5)

4F)   Discuss, with examples the types of joints based on structural   (5)
        classification. Define any two joint disorders.
        (3+2 = 5 marks)

5. Give reasons for the followings:

5A)   Liver failure may lead to excessive blood loss.   (2)

5B)   Yellow bone marrow does not take part in RBCs production.   (2)

5C)   Connective tissue components help to fight infection.   (2)

5D)   From 18-20 year of age, bone ceases to grow in length.   (2)

5E)   Vasoconstriction increases blood pressure.   (2)

Reg. No.: _____

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FIRST YEAR B. PHARM. DEGREE EXAMINATION - JULY 2017
SUBJECT: BIOCHEMISTRY (PBT 103T)
(2014 REGULATION)
Wednesday, July 19, 2017 (10.00 - 13.00 Hrs.)

Marks: 70   **Duration: 180 mins.**

Answer all the questions.

Long answer questions:

1)   Explain the reactions of pentose phosphate pathway. Add a note on   (10)
        the significance of NADPH.

2)   Define β-Oxidation. Explain the steps involved in complete   (10)
        oxidation of Palmitic acid.

3)   Enlist the requirements and explain 'translation process proper' with (10)
        respect to eukaryotes.

4. Short answer questions:

4A)   Enlist any four factors affecting enzyme activity. Write in brief on any (5)
        two factors.

4B)   Define enzyme kinetics. Write about the induced fit model of enzyme   (5)
        action.

4C)   Explain the steps involved in the formation of stercobilin from Bile   (5)
        pigments.

4D)   Write the enzyme defect, clinical manifestation, diagnosis and   (5)
        treatment associated with phenylketonuria.

4E)   Classify minerals. Write about the biochemical functions, RDA and   (5)
        deficiency symptoms of iron.

4F)   Sketch the degradation of purine nucleotides.   (5)

5. Give reason for the following:

5A)   Lysosomes are regarded as digestive tract of the cell.   (2)

5B)   Cyanide is one of the most potent inhibitor of ETC.   (2)

5C)   Unconjugated bilirubin gives a positive van den Bergh test on addition (2)
        of alcohol.

5D)   Cause of black urine disease.   (2)

5E)   DNA topoisomerases and ligases are highly essential for the replication (2)
        process.

FIRST YEAR B. PHARM. DEGREE EXAMINATION - JULY 2017
SUBJECT: PHARMACEUTICAL ANALYSIS - I (PQA 104T)
(2014 REGULATION)
Friday, July 21, 2017 (10.00 - 13.00 Hrs.)

Marks: 70   Duration: 180 mins.

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)	Write a note on systematic or determinate errors.	(10)
2)	Write a note on Indicator errors encountered during neutralization titrations.	(10)
3A)	What is Iodometry? Explain with example.	(5)
3B)	How the side reaction affects the redox titration? Explain with suitable example.	(5)

4. **Short answer questions:**

4A)	Write the applications of complexometric titrations.	(5)
4B)	Explain the fractional precipitation with example.	(5)
4C)	Explain the phenomenon of precipitation from homogeneous solution with examples.	(5)
4D)	Write a note on common ion effect.	(5)
4E)	Explain the principle of arsenic limit test.	(5)
4F)		(3)
i)	Explain the principle of non-aqueous titration of weak bases.	
II)	Write the principle of diazotization titration.	(2)

5. **Short Answer Questions**

5A)	Explain the effect of temperature and solvent on the solubility of the precipitate.	(2)
5B)	What are constant errors and proportional errors?	(2)
5C)	Why there is need of carryout the limit test for iron in pharmaceutical preparation?	(2)
5D)	Why excess of potassium iodide must be used in Iodometric determinations of oxidizing agents?	(2)
5E)	Why water is not used as a solvent in the assay of weakly basic drugs by non-aqueous titration?	(2)

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FIRST YEAR B. PHARM. DEGREE EXAMINATION - JULY 2017
SUBJECT: PHARMACEUTICAL ORGANIC CHEMISTRY (PCH 105T)
(2014 REGULATION)
Monday, July 24, 2017 (10.00 - 13.00 Hrs.)

Duration: 180 mins.

Marks: 70

Answer all the questions.

Long Answer Questions:

1A)	Explain two methods of generation of carbocations.	(4)
1B)	What is Claisen condensation reaction? Explain the reaction mechanism.	(6)
2A)	Explain two methods of preparation of phenols with equations.	(4)
2B)	Explain the necessary conditions required for a compound to show an optical activity?	(6)
3A)	Discuss the reaction mechanism involved in bromination of nitrobenzene.	(6)
3B)	Give any two methods of preparation of Aldehydes.	(4)

4. Short Answer Questions:

4A)	Explain with mechanism, the use of the following reagents in organic synthesis: i) Aluminium isopropoxide ii) Sodium borohydride.	(5)
4B)	Give the mechanism and evidences for E2 reaction.	(5)
4C)	State Markovnikov's rule. Explain with mechanism.	(5)
4D)	Explain the MO theory with an example.	(5)
4E)	Explain sp2 hybridization with an example.	(5)
4F)	What products would you obtain when HBr is added to 1, 3-butadiene? Justify your answer..	(5)

5. Give Reasons for the Following:

5A)	Excess isopropanol must be added while carrying out MPV reduction.	(2)
5B)	$S_N 2$ reactions are bimolecular.	(2)
5C)	Lewis acid is used as catalyst in halogenation of benzene.	(2)
5D)	Addition of bromine to cyclohexene gives trans product.	(2)
5E)	Carbon tetrachloride has zero dipole moment.	(2)

MANIPAL UNIVERSITY

FIRST YEAR B. PHARM. DEGREE EXAMINATION – JULY 2017

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

Monday, July 24, 2017

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

✍ **Answer ALL the questions.**

✍ **Long Essays:**

1A. Explain Markovnikov's addition with mechanism.

1B. Discuss the mechanism of E2 reaction with suitable example.

(4+4 = 8 marks)

2A. What is racemic modification? Explain the methods used for separation of a racemic mixture.

2B. Discuss with suitable example, the mechanism of S_N1 reaction.

(5+3 = 8 marks)

3A. Discuss the theory of reactivity in Electrophilic aromatic substitution.

3B. What are carbocations? Explain their generation and applications.

(4+4 = 8 marks)

4. **Short Essays:**

4A. Give the mechanism and synthetic applications of aldol condensation reaction.

4B. Write specific uses of following reagents:

i)   Sodium borohydride   ii)   N-bromosuccinimide

4C. Give the preparation and assay of Chlorbutol.

4D. Explain four methods of preparation of alkenes with equations.

(4 marks × 4 = 16 marks)

5. **Short Answers:**

5A. Give two reactions of phenols with equations.

5B. Give the structure and uses of glycerol.

5C. Explain the following:

i)   cis-trans isomerism   ii)   Electronegativity

5D. Explain two condensation reactions of aldehydes with equations.

5E. What are nitronium ions? How are they generated?

(2 marks × 5 = 10 marks)

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FIRST YEAR B. PHARM. DEGREE EXAMINATION - JULY 2017
SUBJECT: PHARMACOGNOSY - I (PCO 106T)
(2014 REGULATION)
Wednesday, July 26, 2017 (10.00 - 13.00 Hrs.)

Marks: 70   **Duration: 180 mins.**

Answer all the questions.

Long Answer Questions:

1)	Give detailed account of asexual methods of cultivation. Give its merits and demerits.	(10)
2)	Describe the morphology and microscopy of bark.	(10)
3)	Explain briefly about principles involved in Homeopathy and Ayurvedic system of medicine.	(10)

4. **Short Answer Questions:**

4A)	Isolation of Starch from various sources.	(5)
4B)	Methods of adulteration with examples.	(5)
4C)	Give the preparation, chemical tests and uses of Honey.	(5)
4D)	Chemical method of evaluation of crude drugs.	(5)
4E)	Give various source, method of preparation and uses of gelatin.	(5)
4F)	Method of preparation and uses of Shark liver oil.	(5)

5. **Give Reasons for the Following:**

5A)	Linseed answers Ruthenium red test.	(2)
5B)	Soil fertility need to be checked before cultivation of crude drugs.	(2)
5C)	Time of collection is very important for medicinal plants.	(2)
5D)	Chlorophyll test is negative for Black Catechu.	(2)
5E)	Digitalis leaf is stored with desiccating agent.	(2)

MANIPAL UNIVERSITY

FIRST YEAR B. PHARM. DEGREE EXAMINATION - JULY 2017
SUBJECT: ENVIRONMENTAL SCIENCE AND ETHICS (PMA 107T)
(2014 REGULATION)
Friday, July 28, 2017 (10.00 - 13.00 Hrs.)

Marks: 70   **Duration: 180 mins.**

Answer all the questions.

Long Answer Questions:

1)	Explain in detail Values of Biodiversity.	(10)
2)	Discuss various issues associated with Environmental Ethics.	(10)
3)	Discuss the limitations of conducting research and what is the value of research. Discuss three areas of ethical concerns in research.	(10)

4. **Short Answer Questions:**

4A)	Discuss the contributions of Jeremy Bentham and John Stuart Mill. Add a note on advantages and criticism of their principles.	(5)
4B)	What is Virtue Ethics? Discuss its limitations.	(5)
4C)	What are various forms of Renewable Natural Resources? Explain with examples.	(5)
4D)	Schematically classify ecosystem mentioning its structural and functional aspects? Write a note on various functions of an ecosystem.	(5)
4E)	Explain causes, effects and control of Water pollution.	(5)
4F)	Describe various adverse effects of environment on Human Health.	(5)

5. **Give Reasons for the Following:**

5A)	Define Morality.	(2)
5B)	Discuss in brief Criticisms of Pragmatism.	(2)
5C)	Enlist Levels of Business Ethics.	(2)
5D)	What are the limitations of Kantianism?	(2)
5E)	List various scientific disciplines needed to understand environmental sciences.	(2)

Manipal College of Pharmaceutical Sciences
Manipal University, Manipal
First Year BPharm – Annual Examination (Makeup), July 2017

Subject: PCE 106. Computer Science and Statistics

Date: 12-07-2017   Time: 10.00 am – 01.00 noon   Max. Marks: 50

Instructions: Answer ALL questions.

I. Long Essay Questions (3 × 8 marks = 24 marks)

1.	Discuss about the generations of computer languages.	8 marks
2A.	Write a short note on generation of computers	4 marks
2B.	Find the geometric mean	4 marks

x	110	115	118	119	120
f	4	11	21	6	2

3. Draw histogram and frequency curve for the following data;   8 marks

C.I.	10-30	30-50	50-70	70-90	90 -110	110 – 130	130-150
F	5	8	12	17	20	22	24

II. Short Essay Questions (4 × 4 marks = 16 marks)

4.	Explain computer networks.	4 marks
5.	Explain features of MS-Excel.	4 marks
6.	Explain the properties of arithmetic mean.	4 marks
7.	Find the mean of the following series: 2, 6, 8, 10, 12, +3, +4, 19.	4 marks

III. Short Answer Questions (5 × 2 marks = 10 marks)

8.	Mention the generation of computers.	2 marks
9.	Explain any two mathematical commands in MS-Excel.	2 marks
10.	What are the input devices of a computer?	2 marks
11.	Find the mode.	2 marks

Sl. No	1	2	3	4	5	6	7	8	9
Cost (Rs)	50	60	75	75	80	85	75	85	50

12. Mention the application of statistics.   2 marks

"End of question paper"

Manipal College of Pharmaceutical Sciences
Manipal University, Manipal
First Year B Pharm Supplementary Exam – July 2017
Subject: MAT 101 Mathematics (Revised Regulations)

Date: 10.07.2017   Time: 10 AM – 1 PM   Max. Marks: 70

Instructions: Answer ALL questions.

I.   Long Essay Questions (3x 10 = 30 marks)

1A. Solve by Cramer's Rule   5 marks

$x + y + z = 7$, $2x + 3y + 2z = 17$, $4x + 9y + z = 37$

1B. Find the adjoint of $\begin{bmatrix} 1 & 2 & 2 \\ 1 & 3 & 4 \\ 1 & 4 & 3 \end{bmatrix}$ 5 marks

2A. A Show that the equation $x^2 + y^2 + 2gx + 2fy + c = 0$ always represents a circle.   5 marks
Write conditions if
i) Origin lies in circle   ii) Circle touches x - axis
iii) Circle touches y axis and   iv) Circle touches both axes.

2B. Find the equation of the sides formed by the points (4, 8) (2, 4) and (6, 6) of a   5 marks
triangle

3A. Differentiate sum of 2 functions of x w.t. x from first principles   5 marks

3B. Differentiate w. r. t x
i) $\text{Cos}^{-1} x$ ii) $\dfrac{b^2 - x^2}{b^2 + x^2}$ iii) $(x^2 - 1)(1 + 2x^3)$

II.   Short Essay Questions (6 x 5 = 30 marks)

4A. Find the equation of the perpendicular bisector of the line joining A(-2, 5) and   3 marks
B (4, -1)

4B. Find the perimeter of the circle $x^2 + y^2 - 4x - 10y + 4 = 0$ 2 marks

5A. What is distance formula? Derive an equation for it

3 marks

5B. If $A = \begin{bmatrix} 4 & -2 \\ 1 & 3 \end{bmatrix}$ find A^2 and adj A

2+3= 5 marks

6. Evaluate i) $\underset{x \to 0}{Lt} \dfrac{e^x - 1}{x}$ ii) $\underset{x \to 1}{Lt} \dfrac{x^2 - 4x + 3}{x^2 - 5x + 4}$ iii) $\underset{x \to 0}{Lt} \dfrac{a^x - 1}{x}$ 3 marks

7. Find the equation of the circle passing through the points (1,1) (-2, 2) and (-2, -8)

1½+2+ 1½ =5 marks

8A. If $A \begin{bmatrix} 4 & -2 \\ 1 & 3 \end{bmatrix}$ verify that $A^2 - 7A + 14I = 0$

3 marks

8B. If (x, 2) is a point on the line joining of A (2, 5) and B (-1, 4) find the value of x

9A. Find the equation of the circle which is described on the line joining (x_1, y_1) and (x_2, y_2) as diameter

3 marks

9B. Find the distance between the points (a-b, a+b) and (a-b, a + b) and (a + b, a-b) 3 marks

III Short Answer Questions (5 x 2 marks = 10 marks)

10. Evaluate i) $\underset{\theta \to 0}{Lt} \dfrac{\tan 11\theta}{\sin 9\theta}$ ii) $\underset{x \to 0}{Lt} \dfrac{\tan 5x - \sin 2x}{x}$

11. Differentiate w.r.t.x i) $8x^5 - 7x^3 - 5$ ii) $\dfrac{a}{x^5} - \dfrac{b}{x^4}$

12. Evaluate $\begin{bmatrix} 2 & -3 & 1 \\ 2 & 2 & 5 \\ 1 & 3 & 4 \end{bmatrix}$

13. Prove that [7,9] [3, -7] [-3,3] form as isocelestriangle

14. Find characteristic roots of the matrix $\begin{bmatrix} 1 & 3 \\ 4 & 2 \end{bmatrix}$

"End of question paper"

Manipal University, Manipal
I Year B.Pharm, Annual Supplementary Examination, July 2017
Subject:PCO 101T.Remedial Biology

Date: 10-07-2017   Time: 10:00 am - 13:00 hrs   Max. Marks: 70

Instructions: Answer ALL questions.
(Draw neat labelled diagrams wherever necessary)

Section A. Long Essay   (3 x10=20 marks)

1. With the help of neat labelled diagram describe the digestive system of frog.

2. Explain briefly the living and non-living cell inclusions of plant

3. Define leaf. With the help of neat labelled diagram explain the different leaf margin and leaf bases

Section B. Short Answer   (6×5 = 30 marks)

4. Draw the neat labelled diagrams of different types of epithelial tissues and its location in animal tissues

5. Write the general characters of class Mammalia.

6. Draw a neat labelled diagram of an animal cell

7. With diagram explain different modifications of the root for storage of food

8. Define floral formula. Explain the different symbols used to describe floral formula.

9. Differentiate between Meristematic and Permanent tissues.

Section C. Give Reasons.   (5× 2 = 10 marks)

8. Lysosomes are called suicidal bags of the cell

9. Frog is a Amphibian

10. Pitcher and bladder are carnivorous plants

11. Striated muscle fibre differs from smooth muscle fibers

12. Gymnosperms differs from Angiosperms

"End of question paper"