

(DIPSAR & DPSRU) 28/5/17

No. of printed pages : 2

Your Roll No.....

II Semester Examination – May 2017

BACHELOR of PHARMACY

Human Anatomy and Physiology

(BPH - 201)

Time : Three Hours

Maximum Marks : 80

*(Write your Roll No. at the top immediately
on receipt of this question paper.)*

- *No student is allowed to leave the Hall before Two hours.*
 - *Answer any FIVE questions.*
 - *All questions carry equal marks.*
1. Discuss the mechanism of blood coagulation. Write a note on blood grouping including Rh factor.
 2. With the help of a well labelled diagram of human heart discuss cardiac cycle and cardiac output in detail.
 3. Write notes on any *two*.
 - a) Lymph circulation
 - b) Regulation of blood pressure
 - c) Lung volumes and capacities.
 4. What is the role of liver in the process of digestion ? Explain the role of pepsin in protein digestion.

P.T.O.

5. Explain the physiology of urine formation and discuss the role of RAS in kidney.
6. Discuss the mechanism and regulation of respiration. Briefly explain the transport of respiratory gases.
7. Write notes on any *two*.
 - a) Genetic pattern of inheritance
 - b) Physiology of Menstruation
 - c) Spermatogenesis.

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(DPSRU)

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Your Roll No.....

II Semester Examination – May 2017

BACHELOR of PHARMACY

**Pharmaceutical Organic Chemistry
(BPH - 202)**

Time : Three Hours

Maximum Marks : 80

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- No student is allowed to leave the Hall before Two hours.
- Answer any FIVE questions.
- All questions carry equal marks.

1. a) Explain the type of hybridisation present in alkanes. (8)

b) Explain rearrangement of carbocations. (8)

2. Explain any two : (8 × 2 = 16)

a) Saytzeff's Orientation

b) Markonikoff's Orientation

c) Diel-Alder Reaction

d) Ozonolysis

P.T.O.

3. a) Give reactions of alcohols. (8)
b) Give structure and uses of ethanolamine. (8)
4. a) Explain the effect of substituents on acidity of a compound. (8)
b) Give structure and uses of any *one* : (8)
i) Methyl salicylic acid
ii) Citric acid
5. Explain any *two* : (8 × 2 = 16)
a) Aldol Condensation
b) Benzoin Condensation
c) Cannizaro reaction
6. Write short notes on any *four* : (4 × 4 = 16)
a) E₁ vs E₂ reactions
b) Isoprene and Isoprane Rule
c) Stability of conjugated dienes
d) Allylic Rearrangement
e) Perkin Condensation.
7. a) How are organic compounds classified? (8)
b) Explain structural isomerism in organic compounds. (8)

18/5/17 (DIPSAR)

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Your Roll No.....

II Semester Examination, May 2017

BACHELOR of PHARMACY

Physical Pharmaceutics - I

(BP - 203)

Time : Three Hours

Maximum Marks : 80

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- *No student is allowed to leave the Hall before Two hours.*
- *Answer any FIVE questions.*
- *All questions carry equal marks.*

1. a) Write a note on mechanism of dissolution and drug release from a carrier to biological system. (8)
- b) Discuss azeotropic mixtures and fractional distillation. (8)
2. a) Discuss various physiochemical properties of drug molecule and state their role in designing of formulation. (10)
- b) Define Polymorphism. Differentiate between crystalline and amorphous forms of solid state. (6)

P.T.O.

3. a) Give a detailed account on methods of determination and application of particle size and its distribution. (10)
- b) Discuss protein binding and their method of analysis. (6)
4. a) Classify Complexes. Write a note on complexation and drug action. (8)
- b) Discuss importance and applications of particle shape, surface, porosity and flow properties. (8)
5. a) Define Buffer capacity. Discuss application of buffers in pharmaceutical and biological system. (8)
- b) Discuss critical solution temperature and its application. (8)
6. Write notes on any *two* : (16)
- a) Raoult's law
- b) Derived properties
- c) Distribution law and application
7. a) Define Permeability. What are the various methods of its determination ? Discuss any one in detail. (8)
- b) Write down the principle of Adsorption. Discuss any one method of its determination. (8)

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II Semester Examination, May 2017

BACHELOR of PHARMACY

Pathophysiology

(BPH - 204)

Time : Three Hours

Maximum Marks : 80

*(Write your Roll No. at the top immediately
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- *No student is allowed to leave the Hall before Two hours.*
 - *Answer any FIVE questions.*
1. Classify Hypertension and discuss in brief the causes of Hypertension. (16)
 2. Define Cell Injury. What are the various causes of cell injury? How does cell adapt to control cell injury? (16)
 3. Classify and explain different types of Anemia. (16)
 4. Write about the causative organisms, pathophysiology and symptoms of any *two* of the following infectious diseases : (16)
 - a) Meningitis
 - b) Typhoid
 - c) Tuberculosis

P.T.O.

5. Write short notes on pathogenesis any *two* of the following: (16)
- a) Parkinson's disease
 - b) Rheumatoid Arthritis
 - c) Inflammatory bowel disease
6. Explain etiology, pathogenesis and symptoms of Diabetes Mellitus. (16)
7. Give the signs and symptoms of any *two* of the following diseases :
- a) Chronic Obstructive Airway Diseases
 - b) Peptic Ulcer
 - c) Jaundice

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II Semester Examination, May 2017

BACHELOR of PHARMACY

**Computer Applications in Pharmacy
(BP - 205)**

Time : Three Hours

Maximum Marks : 60

*(Write your Roll No. at the top immediately
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- No student is allowed to leave the Hall before Two hours.
- Answer any FIVE questions.
- All questions carry equal marks.

1. Write notes on the following :

(3 × 4 = 12)

- a) Patient Monitoring System
- b) Pharma Information System
- c) Bioinformatics Databases

2. a) Differentiate between HTML, XML and CSS. (6)

b) Explain in detail Text Information Management System and Laboratory Information Management System. (6)

3. a) Define Bioinformatics with its objective. (6)

b) Explain Information gathering, requirement and feasibility analysis. (6)

P.T.O.

4. a) Differentiate between binary number system and the hexadecimal number system. (6)
- b) What are the requirements for One's complement and Two's complement? (6)
5. Convert to Octal number system : (3 × 4 = 12)
- a) $(11111000111)_2$
- b) $(1111000001)_2$
- c) $(ABC)_{16}$
6. Define : (6 + 6 = 12)
- a) My SQL
- b) Ms Access
7. Why do we need computers in Pharmacy Space ? Explain the usage of the computers in pharmaceutical industry. (12)

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Your Roll No.....

II Semester Examination, May 2017

BACHELOR of PHARMACY

Environmental Sciences

(BP - 206)

Time : Three Hours

Maximum Marks : 60

*(Write your Roll No. at the top immediately
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- *No student is allowed to leave the Hall before Two hours.*
- *Answer any THREE questions.*
- *All questions carry equal marks.*

1. Describe the following : (4 × 5 = 20)
 - a) Water resources and problems associated with them
 - b) Food resources and problems associated with them
 - c) Renewable and non-renewable resources
 - d) Explain the role of an individual in conservation of natural resources

2. a) Describe the characteristic features, structure and functions of aquatic ecosystems. (8)

P.T.O.

- b) Write a detailed account on Grassland ecosystems. (8)
- c) Write a short note on forest ecosystem. (4)
3. a) Describe the causes of water pollution and how to prevent water pollution. (8)
- b) Describe the major types of air pollution according to EPA. (8)
- c) What are the causes of soil pollution. (4)
4. a) What is mineral resources, types of minerals and their uses.
- b) Describe the structure and function of the desert ecosystem.
- c) Management of energy resources.
- d) Write a short note on greenhouse effects and global warming.

(4 × 5 = 20)

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Your Roll No.....

II year lateral entry

~~Year 3rd Sem~~

Examination – May 2017

BACHELOR of PHARMACY

Mathematics

(BPH - 08)

Time : Three Hours

Maximum Marks : 80

(Write your Roll No. at the top immediately
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- No student is allowed to leave the Hall before Two hours.
- Answer any FIVE questions.
- All questions carry equal marks.
- Use of simple calculator is allowed.

1. a) Evaluate $\lim_{x \rightarrow 2} \frac{\sqrt{x+7} - 3}{x-2}$. (6)

b) Differentiate the following w.r. to x : (10)

i) $\tan^{-1}\left(\frac{y}{x}\right) = \log \sqrt{x^2 + y^2}$

ii) $y = \frac{x + e^x}{1 + \log x}$

P.T.O.

2. Integrate the following :

(16)

i) $\int \left(x - \frac{1}{x}\right)^3 dx$

ii) $\int \frac{\sin x}{1 + \sin x} dx$

iii) $\int x^2 e^{2x} dx$

iv) $\int_0^{\pi/2} \tan^2 x dx$

3. Solve the differential equations :

(16)

i) $\frac{dy}{dx} = \frac{xy}{x^2 + y^2}$

ii) $(D^2 + 4)y = \cos 2x$

4. a) Find the Laplace transform of $t^2 \cos at$.

(5)

b) Find the Inverse Laplace transform of $\frac{1}{s(s^2 + a^2)}$.

(5)

c) Find the 2nd order derivative of $\log(ax + b)$.

(6)

5. a) Represent the following data by less than ogive : (8)

Age (yrs)	10-20	20-30	30-40	40-50	50-60
No. of Patients	10	37	65	80	51

- b) Define measures of central tendency. What are the characteristics of a good measure of central tendency ? (8)

6. a) Calculate the coefficient of variation from the following data : (8)

Class interval	101-105	106-110	111-115	116-120	121-125
Frequency	6	22	40	25	7

- b) Explain any *two* of the following terms : (8)

- i) F-test
- ii) ANOVA
- iii) Binomial distribution.

7. a) Calculate rank correlation from the data : (10)

X : 78 89 97 69 59 79 68 57

Y : 125 135 156 112 107 136 123 108

b) State Baye's theorem.

(6)

8. Fit a straight line of Y on X from the data :

(16)

X :	0	1	2	3	4	5	6
Y :	2	1	3	2	4	3	5