

**FACULTY OF TECHNOLOGY**

**B. Pharmacy I - Year (Supplementary) Examination, March 2010**

**Subject : BIOLOGY**

Time : 3 Hours}

{Max. Marks: 70

**Note: Answer All questions. All questions carry equal marks.**

- 1.(a)(i) Give the salient features of plant cell. (7)  
(ii) Describe the structure and function of xylem. (7)

**OR**

- (b)(i) Write the differences of mitosis and meiosis. (7)  
(ii) Describe modifications of root. (7)

- 2.(a) Give the classification, medical and economic importance of solanaceae. (14)

**OR**

- (b)(i) Give the classification of Leguminosae. (7)  
(ii) Write the medicinal and economic importance of Rubiaceae. (7)

- 3.(a) What are mutations ? Explain the basis of significance of mutations. (14)

**OR**

- (b)(i) Describe the physiology of photosynthesis. (7)  
(ii) What is DNA replication ? Explain replication process. (7)

- 4.(a)(i) Explain the histological structure of liver. (7)  
(ii) Enumerate the endocrine glands of rabbit with functions. (7)

**OR**

- (b)(i) Describe the structure and function of kidney. (7)  
(ii) Write the difference of animal cell with that of plant cell. (7)

- 5.(a) Discuss the morphology and life history of Trypanosoma. (14)

**OR**

- (b)(i) Describe the life history of Entamoeba. (7)  
(ii) Discuss the diseases spread by mosquitoes. (7)

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## FACULTY OF TECHNOLOGY

B. Pharmacy I - Year (Supplementary) Examination, March 2010

Subject : MATHEMATICS

Time : 3 Hours}

{Max. Marks: 70

**Note:** Answer All questions. All questions carry equal marks.1.(a) If  $x = \log_a^{bc}$ ,  $y = \log_b^{ca}$  and  $z = \log_c^{ab}$  then show that  $xyz = x + y + z + 2$ .(b) If  $\sin x + \sin y = \frac{1}{4}$  and  $\cos x + \cos y = \frac{1}{3}$  then show that

$$\tan\left(\frac{x+y}{2}\right) = \frac{3}{4} \text{ and } \cot(x+y) = \frac{7}{24}.$$

(c) If  $A + B + C = 180^\circ$ , prove that  $\sin A + \sin B + \sin C = 4 \cos \frac{A}{2} \cos \frac{B}{2} \cos \frac{C}{2}$ 

OR

(d) If  $8\alpha$  is not an integral multiple of  $\pi$ , prove that  $\tan \alpha + 2\tan 2\alpha + 4\tan 4\alpha + 8\cot 8\alpha = \cot \alpha$ .(e) If  $A + B + C = 180^\circ$ , prove that,  $\sin A + \sin B - \sin C = 4\sin \frac{A}{2} \sin \frac{B}{2} \cos \frac{C}{2}$ (f) If  $\frac{\cos \alpha}{a} = \frac{\sin \alpha}{b}$  show that  $a \cos 2\alpha + b \sin 2\alpha = a$ .2.(a) If  $u = x^3 + y^3 - x^2y + xy^2$ , find  $x \frac{\partial u}{\partial x} + y \frac{\partial u}{\partial y}$ .(b) Compute  $\lim_{x \rightarrow 2} \frac{x-2}{x^3-8}$ .(c) Find  $\frac{dy}{dx}$  when  $y = \log x$  using first principle.

OR

(d) Find the maximum value of  $2x^3 - 3x^2 - 36x + 10$ .(e) If  $x = r \cos \theta$ ,  $y = r \sin \theta$ , then find  $\frac{\partial^2 \theta}{\partial x^2}$ ,  $\frac{\partial^2 \theta}{\partial y^2}$ ,  $\frac{\partial^2 \theta}{\partial x \partial y}$ .(f) Differentiate,  $\sqrt{\frac{1+x^2}{1-x^2}}$ .3.(a) Evaluate  $\int \frac{x^5}{1+x^{12}} dx$ .(b) Evaluate  $\int \frac{2x+1}{x^2+x+1} dx$ (c) Evaluate  $\int \frac{1}{1+\sin 2x} dx$ 

OR

(d) Evaluate  $\int_0^{\pi/2} x \sin x dx$ .(e) Evaluate  $\int_0^{\pi} \frac{x}{1+\sin x} dx$ (f) Find the area bounded between the curves  $y^2 = 4ax$ ,  $x^2 = 4by$ .

4.(a) If  $A = \begin{bmatrix} 1 & 2 & 2 \\ 2 & 1 & 2 \\ 2 & 2 & 1 \end{bmatrix}$ , then show that  $A^2 - 4A - 5I = 0$

(b) Define row matrix, column matrix. Find the rank of the matrix  $A = \begin{bmatrix} 1 & 2 & 3 \\ 2 & 3 & 4 \\ 0 & 1 & 2 \end{bmatrix}$

OR

(c) Solve the following equation by Gauss-Jordan method.

$$3x + 4y + 5z = 18$$

$$2x - y + 8z = 13$$

$$5x - 2y + 7z = 20$$

(d) If  $A = \begin{bmatrix} 3 & -2 \\ 1 & 6 \end{bmatrix}$ ,  $B = \begin{bmatrix} 4 & -1 \\ 2 & 5 \end{bmatrix}$ , then find  $AB$  and  $BA$ .

5.(a) Define Boolean algebra. Discuss the set of postulates defining Boolean algebra.

(b) Construct logic circuit for the following Boolean function using AND / OR / NOT gates :

$$f = (A + B) (A \bar{\neg} B)$$

OR

(c) Show that the points  $(-1, 7)$   $(3, -5)$   $(4, -8)$  are collinear.

(e) Show that the points  $2\bar{i} + 3\bar{j} - \bar{k}$ ,  $\bar{i} - 2\bar{j} + 3\bar{k}$ ,  $3\bar{i} + 4\bar{j} - 2\bar{k}$  are coplanar.

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Code No. : 4401

**FACULTY OF PHARMACY**

**B. Pharm. I Year (Suppl.) Examination, November/December 2010**

**ANATOMY, PHYSIOLOGY AND HEALTH EDUCATION**

Time : 3 Hours]

[Max. Marks : 70

*Note : Answer all questions. All questions carry equal marks.*

1. a) Draw a neat labelled diagram of Sternum and Scapula. 6

b) Illustrate properties and functions of muscle tissue. 8

OR

c) Draw a neat labelled diagram of ankle bones. 4

d) Describe the properties and functions of epithelial tissue. 10

2. a) Draw a neat labelled diagram of simple reflex arc and write a note on reticular formation. (3+3)

b) Describe the properties and functions of autonomic nervous system. 8

OR

c) Illustrate various stages occurring in cardiac cycle. 8

d) Add a note on functions of Forebrain. 6

3. a) Explain the terms Vital Capacity, tidal volume, hypoxia and dyspnoea. 8

b) Give the diagrammatic representation of different phases involved in secretion of gastric juice. 6

OR

c) List out the various hormones secreted by the adrenal gland and write its functions. 8

d) Add a note on enzymes involved in digestion. 6



Code No. : 401

4. a) Discuss the physiology of vision. 7  
b) Describe the structure of nephron with neat labelled diagram. 7

OR

- c) Illustrate the physiology of smell and taste. 8  
d) Discuss the mechanism of urine formation. 6  
5. a) Classify vitamins with examples and write its deficiencies. 8  
b) Add a note on chemical methods of contraception. 6

OR

- c) Write a note on :  
Inflammation and Repair. 8  
d) IUCD. 6



Code No. : 4406

**FACULTY OF PHARMACY**

**B. Pharmacy I Year (Suppl.) Examination, November/December 2010  
BIOLOGY**

Time : 3 Hours]

[Max. Marks : 70

*Note : Answer all questions. All questions carry equal marks. Draw neat and labelled diagrams wherever necessary.*

1. a) i) Describe the underground stem modifications. 7

ii) Describe the structure of Ovule and write a note on fertilization. 7

OR

b) i) Describe the formation of wood. 7

ii) Draw neat and labelled diagram of T.S. of monocot root. 7

2. a) i) Describe the vegetative and floral characteristics of Papilionaceae (fabaceae) 8

ii) Write a note on economic and medicinal importance of Apocynaceae. 6

OR

b) i) Describe the vegetative and floral characteristics of Scrophulariaceae. 8

ii) Give the floral formula, floral diagram and economic importance of Rubiaceae. 6

3. a) i) Describe T.C.A. cycle in plants. 7

ii) Discuss the phenomenon of Absorption of water in plants. 7

OR

b) i) Discuss Mutations in plants. 7

ii) Discuss the Genetic Code. 7



Code No. : 406

4. a) i) Draw neat and labelled diagram of Venous system of frog. 7

ii) Describe the histology of pituitary glands of Rabbit. 7

OR

b) i) Describe the urino-genital system of frog. 7

ii) Discuss Connective tissue in animals. 7

5. a) i) Describe the life-cycle of plasmodium in man. 7

ii) Describe the morphology and life-cycle of Anchylostoma. 7

OR

b) i) Discuss the role of mosquitoes as agents for spreading diseases. 7

ii) Describe the life-history of tapeworm. 7



Code No. : 4405

**FACULTY OF PHARMACY**  
**B. Pharm I Year (Suppl.) Examination, November/December 2010**  
**BASIC COMPUTER APPLICATIONS**

Time : 3 Hours]

[Max. Marks : 70

*Note : Answer all questions. All questions carry equal marks.*

1. a) Explain the various input-output devices. 8  
b) Draw a flowchart for roots of quadratic equation. 6
- OR
- c) Explain the importance of operating systems. 8  
d) Discuss difference between RAM and ROM. 6
2. a) Write a program using Switch case. 8  
b) Explain the operators and expressions. 6
- OR
- c) Write a program to calculate the reverse number. 6  
d) Explain the types of loop and give the examples. 8
3. a) Explain about Word Screen. 8  
b) Discuss about working with files. 6
- OR
- c) Describe the spread sheet. 7  
d) Explain the formatting. 7



4. a) Explain the power point basics and design. 7

b) Discuss about the slide control. 7

OR

c) Write about data types. 7

d) Explain about importing and exporting. 7

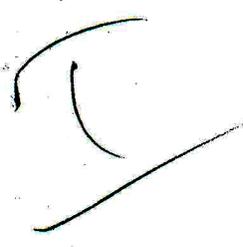
5. a) Explain the Browser and Information search. 7

b) Write about Hyper Text Manuscript Language (HTML). 7

OR

c) Explain the Structured Query Language (SQL). 7

d) Explain the database concepts. 7



**FACULTY OF PHARMACY**  
**B. Pharmacy I Year (Suppl.) Examination, November/December 2010**  
**PHARMACEUTICS – I (General and Dispensing Pharmacy)**

Time : 3 Hours]

[Max. Marks : 70

*Note : Answer all questions. All questions carry equal marks.*

- I. a) Discuss in detail about the career opportunities available for pharmacy graduates. 8
- b) Calculate the dose for a
- i) Nine months old infant
  - ii) Child of 5 years and
  - iii) Boy of 16 years age when the adult dose of drug is 100 mg. 6
- OR
- c) Explain about the pharmaceutical education in India. 8
- d) Write short notes on I.P. and USP. 6
- II. a) Define the term 'prescription'. Describe in brief the various parts of prescription with suitable example. 7
- b) Write in brief about the various information required to be given on the label of dispensed medicines. 7
- OR
- c) Discuss the various types of glasses used for packing of pharmaceuticals. 7
- d) Write a note on colours and flavours used in dispensing of pharmaceuticals. 7



III. a) Discuss the formulation of suspensions with suitable examples. 7

b) Write a note on : 7

- i) Calamine lotion
- ii) Eye drops.

OR

c) Describe different methods used to prepare Aromatic waters. 7

d) Write a note on : 7

- i) Significance of HLB value
- ii) Nasal drops.

IV. a) What are suppositories ? Discuss the various methods of preparation of suppositories. 7

b) Discuss the chemical incompatibilities which occur due to soluble salicylates. 7

OR

c) Write short notes on : 7

- i) Pastilles
- ii) Tablet triturates.

d) Explain the physical incompatibilities with suitable examples. 7

V. a) Explain the procedures for preparation of radio pharmaceuticals. 7

b) Write a note on handling and storage of medicinal gases. 7

OR

c) Describe the percolation process with suitable example. 7

d) Write a note on diagnostic and therapeutic applications of radio pharmaceuticals. 7



Code No. : 4402

FACULTY OF PHARMACY  
B. Pharmacy I Year (Supplementary) Examination, Nov./Dec. 2010  
PHARMA. INORGANIC CHEMISTRY

Time : 3 Hours]

[Max. Marks : 70

*Note : Answer all questions. All questions carry equal marks.*

- I. a) 1) Classify the Pharmaceutical Inorganic compounds based on their therapeutic uses. 8
- 2) What is limit test and explain the purpose of prescribing limits for impurities in Pharmacopoeial substances. 6

OR

- b) 1) Discuss the principle and procedure involved in the limit test for Arsenic. 8
- 2) Write the identification tests for the following radicals.  
i) Bicarbonates, ii) Chlorides, iii) Potassium. 6

- II. a) 1) What is an Antacid ? Describe the preparation of Aluminium hydroxide gel with reaction. 8
- 2) Give the preparation and assay for sodium chloride. 6

OR

- b) 1) Write a brief account of dialysis fluid, their general composition, mode of supply and application. 8
- 2) What is systemic alkalisers ? Explain with suitable example. 6

- III. a) 1) What is the role of Iron in the body ? Write the method of preparation of Ferrous gluconate and Ferric ammonium citrate. 8
- 2) Differentiate Adsorbents and Absorbents. 2
- 3) Write a note on Purified water. 4

OR



- b) 1) What are Antioxidants ? Write the method of preparation, properties, test for purity and uses of sodiummetabisulphite. 8
- 2) Write a note on excipients. 4
- 3) List out the official Haematinics and Phosphate compounds. 2
- IV. a) 1) Define expectorants. Discuss the preparation, properties and application of  
i) Ammonium                      ii) Potassium Iodide. 8
- 2) Write a note on Antidotes. 6
- OR
- b) 1) What are emetics ? Discuss the preparation, properties and application of  
i) Potassium antimony tartarate,    ii) Copper sulphate. 8
- 2) What are Inhalants ? Name some official inhalants. 2
- 3) Give the method of preparation and assay of Oxygen. 4
- V. a) 1) What are Antiinfective agents ? Write the preparation, properties and application of :  
i) Hydrogen peroxide,                      ii) Yellow mercuric oxide. 8
- 2) Write a note on :  
i) Diagnostic agents                      ii) Surgical Aid. 6
- OR
- b) 1) What are topical agents ? Write the composition, preparation and uses of calamine lotion. 8
- 2) Write the principle and procedure involved in the assay of  
i) Silver nitrate                      ii) Yellow mercuric oxide. 6



Code No. : 4404

**FACULTY OF PHARMACY**  
**B. Pharmacy I Year (Supplementary) Examination, Nov./Dec. 2010**  
**MATHEMATICS**

Time : 3 Hours]

[Max. Marks : 70

*Note : Answer all questions. All questions carry equal marks.*

1. a) If  $\log_a [1 + \log_b [1 + \log_c x]] = 0$ , find  $x$ .

b) If  $\sin \alpha = \frac{1}{\sqrt{10}}$ ,  $\sin \beta = \frac{1}{\sqrt{5}}$  and  $\alpha, \beta$  are acute then find  $\alpha + \beta$ .

OR

c) Prove that  $\sin A \sin\left(\frac{\pi}{3} + A\right) \sin\left(\frac{\pi}{3} - A\right) = \frac{1}{4} \sin 3A$ . Hence show that

$$\sin\left(\frac{\pi}{9}\right) \sin\left(\frac{2\pi}{9}\right) \sin\left(\frac{3\pi}{9}\right) \sin\left(\frac{4\pi}{9}\right) = \frac{3}{16}.$$

d) If  $x = 1 + \log_a bc$ ,  $y = 1 + \log_b ca$ , and  $z = 1 + \log_c ab$ , prove that  $xyz = xy + yz + zx$

2. a) Show that  $\lim_{x \rightarrow 1} \frac{x-1}{2x^2 - 7x + 1} = -\frac{1}{3}$ .

b) Find the maximum and minimum values of  $f(x) = x^3 + \frac{3}{x}$

OR

c) If  $u = \frac{x}{y} + \frac{y}{z} + \frac{z}{x}$ , show that  $x \frac{\partial u}{\partial x} + y \frac{\partial u}{\partial y} + z \frac{\partial u}{\partial z} = 0$ .

d) Prove that  $x^3 - 3x^2 + 3x + 7 = 0$ , has neither maximum nor minima.



3. a) Evaluate  $\int \frac{1}{x(1+\log x)} dx$

b) Evaluate  $\int \frac{xe^x}{(1+x)^2} dx$

OR

c) Evaluate  $\int \frac{1-\sin x}{x+\cos x} dx$

d) Evaluate  $\int \frac{\sin x \cos x}{1+\sin^4 x} dx$

4. a) Define Rank of the matrix and hence find the rank of the matrix,

$$A = \begin{bmatrix} 1 & 2 & 3 & 4 \\ 2 & 4 & 6 & 8 \\ 3 & 6 & 9 & 12 \end{bmatrix}$$

b) Solve the system of equations

$$2x - y + 8z = 13, 3x + 4y + 5z = 18 \text{ and } 5x - 2y + 7z = 20 \text{ by Gaussian}$$

elimination method.

OR

c) Solve the system of equations

$$x + 2y + 3z = 4, 2x + 3y + 5z = 5, 3x + 4y + 6z = 12 \text{ by matrix inversion method.}$$



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d) If  $A = \begin{bmatrix} 1 & 2 & 3 \\ 2 & 3 & 4 \\ 3 & 4 & 5 \end{bmatrix}$  and  $B = \begin{bmatrix} 1 & 2 & 0 \\ 2 & 3 & 2 \\ 1 & -1 & 2 \end{bmatrix}$  then find  $(AB)^{-1}$

5. a) Define linear and non-linear correlation.

b) From the data given below find the number of items  $n$ ,  $r=+0.5$ ,  $\sum xy=120$ ,  $\sigma_y=8$ ,  $\sum x^2=90$  where  $x$  and  $y$  are deviations from arithmetic average.

OR

c) Mention the types of correlation and simple multiple and partial correlation.

d) Prove that the correlation coefficients 'r' lies between -1 and 1.