

FACULTY OF PHARMACY**B. Pharmacy I – Year (Supplementary) Examination, November 2015****Subject: Anatomy, Physiology and Health Education****Time: 3 Hours****Max.Marks: 70****Note: Answer All questions. All questions carry equal marks.**

- 1 a) Define the following anatomical terms with examples. 4
 i) Lateral ii) Distal iii) Inferior iv) Anterior
 b) Describe the structure and functions of epithelial and nervous tissue. 10
 OR
 c) Identify the principal bones of the axial skeleton system and mention their functions. 7
 d) Discuss the active and passive transport across the plasma membrane. 7
- 2 a) Describe the structure and functions of the brain. 7
 b) Explain the composition and function of blood. 7
 OR
 c) Explain the physiology of nerve impulse conduction. 7
 d) Give the anatomical structure and conducting system of the heart. 7
- 3 a) Give the structure and functions of the liver. 6
 b) Explain the physiology of respiration. 8
 OR
 c) Outline the actions of the hormones secreted by the anterior and posterior lobes of the pituitary gland. 9
 d) Discuss the anatomical structure and functions of small intestine. 5
- 4 a) Explain the gross and microscopic structure of the kidney. 6
 b) Discuss the anatomy and physiology of taste buds. 8
 OR
 c) Explain the physiology of urine formation. 8
 d) Explain the anatomy and physiology of eye. 6
- 5 a) Explain the various types of birth control methods. 10
 b) Write about symptoms and causes of shock. 4
 OR
 c) Write about deficiency diseases of fat soluble vitamins. 8
 d) Write a note on the following:
 i) Neoplasms 3
 ii) Embolism. 3

FACULTY OF PHARMACY

B. Pharmacy I – Year (Supplementary) Examination, November 2015

Subject: Basic Computer Applications

Time: 3 Hours

Max.Marks: 70

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

- 1 a) Draw the block diagram and explain the components of computer.
b) Describe about different types of memory chips.
OR
c) What are different output devices used for computers? Explain different types of printers.
d) What is operating system? Explain briefly about the importance of operating system and Windows OS.
- 2 a) Explain data input and output statements in C-language.
b) Explain with examples:
i) Arithmetic operators
ii) Expressions.
OR
c) Write a program for roots of quadratic equation using C-language.
d) Write a brief note on Arrays.
- 3 a) Give an overview on tools available in MS-word.
b) Explain about:
i) Tables
ii) Header and Footer in MS-word with examples.
OR
c) Write about different types of charts available in MS-Excel.
d) Write the mathematical and statistical functions in MS-Excel.
- 4 a) What are the different views available in MS-Power point, explain them?
b) Discuss about Power point presentation preparation by applying background, design and animations.
OR
c) Explain about database preparation, querying and table relationships in MS-Access.
- 5 a) Explain the following:
i) Structure and organization of WWW
ii) Search engines
iii) HTML
iv) Internet browsers
OR
b) Write about chemical database design and their tools.
c) Write a note on E-mail and internet.

FACULTY OF PHARMACY**B. Pharmacy I – Year (Supplementary) Examination, November 2015****Subject: Mathematics****Time: 3 Hours****Max.Marks: 70****Note: Answer All questions. All questions carry equal marks.**

1 a) If $\log x = \log 3 + 2 \log 4 - \frac{3}{4} \log 16$, then find the value of x .

b) If $\cos \theta = \frac{5}{13}$; $0 < \theta < \frac{\pi}{2}$, then find the value of $\frac{\cos \theta + 5 \cot \theta}{\operatorname{cosec} \theta - \cos \theta}$.

OR

c) If $0 \leq \theta \leq \frac{\pi}{2}$ be such that $\tan \theta = \frac{5}{12}$ then find $\frac{\sin \theta + \cos \theta - \cot \theta}{\operatorname{cosec} \theta - \sec \theta + \tan \theta}$.

d) If $a = \log_{24}^{12}$, $b = \log_{36}^{24}$ and $c = \log_{48}^{36}$, then show that $abc = -1$.

2 a) Find $\lim_{x \rightarrow a} \frac{\sin(x-a)}{x^5 - a^5}$.

b) If $u = x^2 y^3$, $x = \log t$, $y = e^t$ then find $\frac{du}{dt}$ in terms of t .

OR

c) If $u = \sin^{-1} \left(\frac{x+y}{\sqrt{x} + \sqrt{y}} \right)$, then prove that $x \frac{du}{dx} + y \frac{du}{dy} = \frac{1}{2} \tan u$.

d) Find $\lim_{\theta \rightarrow 0} \frac{1 - \cos \theta}{\theta^2}$.

3 a) Find $\int \frac{1}{2 + 3 \sin x} dx$.

b) Evaluate $\int \cos^3 x \sin x dx$.

OR

c) Evaluate $\int \frac{\tan x}{1 + \cos^2 x} dx$.

d) Show that the area of a loop of the curve $x^4 = a^2 (x^2 - y^2)$ is $\frac{2a^2}{3}$.

4 a) Find the values of the determinant $\begin{vmatrix} 1+b+2c & a & b \\ c & b+c+2a & b \\ c & a & c+a+2b \end{vmatrix}$.

b) Solve the system of equation's $x+y+z = 1$, $x+2y+2z = 3$, $x+2y+3z = 4$ by matrix inversion method.

OR

c) Find the value of x if $\begin{vmatrix} 2-x & 3 & 3 \\ 3 & 4-x & 5 \\ 3 & 5 & 4-x \end{vmatrix} = 0$.

d) Define symmetric and show symmetric matrix.

If $A = \begin{bmatrix} 1 & -2 & 3 \\ 2 & 3 & -1 \\ -3 & 1 & 2 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & 0 & 2 \\ 0 & 1 & 2 \\ 1 & 2 & 0 \end{bmatrix}$ find BA.

5 a) Write about linear and non-linear graphs.

OR

b) Find the equation of a circle passing through the points (2,3), (0,4) and (5,6).

FACULTY OF PHARMACY**B. Pharmacy I – Year (Supplementary) Examination, November 2015****Subject: Biology****Time: 3 Hours****Max.Marks: 70****Note: Answer All questions. All questions carry equal marks.**

- 1 a) i) Write an outline of classification of plant kingdom. 7
 ii) What is a flower and describe the floral parts. 7
OR
- b) i) Describe modifications of the root. 7
 ii) What is inflorescence? Discuss various types of racemose inflorescence. 7
- 2 a) i) Give an account of floral characteristics of apocynaceae and add a note on medicinal importance. 8
 ii) Give an account on floral characteristics and economic importance of scrophulariaceae. 6
OR
- b) i) Describe the floral features of leguminosae and add a note on their economic importance. 7
 ii) Give an account of the floral characters of solanaceae and mention three medicinally important plants. 7
- 3 a) i) Give an account of the structure of DNA. 7
 ii) What is polyploidy and discuss about aneuploidy. 7
OR
- b) i) Describe Krebs's cycle. 7
 ii) Write an account on methods of absorption in plants. 7
- 4 a) Give a detailed account of reduction division. 14
OR
- b) i) Give an account on endocrine glands of rabbit. 8
 ii) Describe the histology of liver. 6
- 5 a) i) Give an account on tapeworm. 7
 ii) Give a detailed account on *Trypanosoma*. 7
OR
- b) i) Discuss the role of mosquitos in causing diseases in humans. 7
 ii) Describe the life history of *Anchylostoma*. 7

FACULTY OF PHARMACY**B. Pharmacy I – Year (Supplementary) Examination, November 2015****Subject: Pharmaceutical Inorganic Chemistry****Time: 3 Hours****Max.Marks: 70****Note: Answer All questions. All questions carry equal marks.**

- 1 a) Discuss about sources of impurities in pharmaceuticals. 8
 b) Give four characteristic tests for group IV cations. 6
OR
 c) Define limit test and give its significance. 2+4
 d) Give the principle and procedure in the limit test for mercury and iron. 4+4
- 2 a) Discuss the importance of sodium in the body. Write the preparation, properties and uses of sodium chloride and sodium bicarbonate. 2+3+3
 b) Give the preparation, assay methods and limit tests for following compounds:
 i) Calcium gluconate 3
 ii) Sodium citrate 3
OR
 c) Explain in detail about dialysis fluids and their significances. 10
 d) Add a note on acid base regulators. 4
- 3 a) Define desiccants with examples. Give the preparation, properties, test for purity of silica gel. 8
 b) Add a note on haematinics. 6
OR
 c) Define the following terms with examples. 3x2=6
 i) Excipients (ii) Suspending agents (iii) Absorbents
 d) Give the preparation and uses of following compounds. 4x2=8
 i) Ferrous sulphate (ii) Magnesium stearate
 iii) Sodium metabisulfite (iv) Sodium phosphate
- 4 a) Define emetics. Give the preparation, properties and uses of zinc sulphate and copper sulphate. 1+3+3
 b) Add a note on antidotes. 7
OR
 c) Give the preparation, properties, assay method, limit test and uses of any two of the following: 2x5
 i) Potassium iodide (ii) Sodium thiosulphate (iii) Ammonium chloride
 d) What are inhalants and give their significance. 4
- 5 a) Give the preparation, test for purity and uses of following compounds. 3x3=9
 i) Silver nitrate (ii) Hydrogen peroxide (iii) Boric acid
 b) Add a note on dentifrices. 5
OR
 c) Write the significance of cements and fillers. 4
 d) What are anti-infectives? Give the preparation, properties and uses of following: 1+3+3+3
 i) Zinc oxide (ii) Potassium permanganate (iii) Zinc stearate.

FACULTY OF PHARMACY**B. Pharmacy I – Year (Supplementary) Examination, November 2015****Subject: Pharmaceutics – I (General & Dispensing Pharmacy)****Time: 3 Hours****Max.Marks: 70****Note: Answer All questions. All questions carry equal marks.**

- 1 a) Discuss about the procedure for registration as pharmacist. 7
 b) Write about the United States Pharmacopoeia. 7
OR
 c) Discuss the pharmacy as a career. 6
 d) Prepare 1000 grams of dilute acid from acetic acid (acetic acid B.P. – 33% w/w; Dil. Acetic acid – 6% w/w). 4
 d) Give the calculations for 100 g powder containing 8% of substance to be made from 10% and 2%. 4
- 2 a) Define prescription and describe the different parts of prescription. 7
 b) Write a note on organoleptic additives used in the formulations. 7
OR
 c) Define the following dosage forms: 4x2
 i) Draughts
 ii) Irrigation solutions
 iii) Creams
 iv) Aromatic waters.
 d) Add a note on containers used for packaging of dispensed products. 6
- 3 a) Write the principle and procedure of the following preparations:
 i) Cresol soap solution 3
 ii) Tincture of iodine 3
 b) Discuss the following:
 i) Creaming 2
 ii) Emulsifying agents 2
 iii) Phase inversion 2
 iv) Caking 2
OR
 c) Distinguish the following:
 i) Deflocculated and flocculated suspensions 3
 ii) Pessaries and suppositories 2
 iii) Floccules and granules 3
 iv) Creaming and cracking 3
 v) Lotions and liniments 3

- 4 a) Discuss about the different types of ointment bases with examples for each. 8
b) Write the preparation of the following: 6
i) Simple ointment
ii) Compound zinc paste

OR

- c) Discuss about the different gelling agents used for preparation of jellies. 8
d) Select a suitable dosage form, write the principle, procedure, formula and mention incompatibility if any to dispense the following prescription. 6

R_x

Arachis oil – 25 ml

Purified water upto – 100 ml

R_x

Tetracycline HCl – 250 mg

Take along with milk.

- 5 a) Write the diagnostic uses of radiopharmaceuticals. 7
b) Discuss the procedure of percolation process for extraction of crude drugs. 7
OR
c) Write about the official medicinal gases and their uses. 8
d) Define the following: 6
i) Decoction
ii) Infusion
iii) Tincture.

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FACULTY OF PHARMACY

B. Pharmacy I - Year (Main) Examination, June 2015

Subject : Anatomy, Physiology and Health Education

Time : 3 hours

Max. Marks : 70

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

- 1 a) Define the following anatomical terms with examples.
i) Medial ii) Proximal iii) Superior iv) Dorsal 4
b) Describe the structure and functions of connective and muscle tissue. 10

OR

c) Identify the important bones of the appendicular skeleton system and mention their functions. 6
d) Describe the processes that transport substances across the plasma membrane. 8
- 2 a) Define cardiac cycle and explain the events in a cardiac cycle. 6
b) Write a note on the following :
i) Ganglion ii) Synapses 4+4

OR

c) Write the composition of the blood and add a note on functions of RBC. 6
d) Write a note on the following :
i) Neurotransmission ii) Reflex arc 4+4
- 3 a) Write about physiology of digestion. 10
b) Outline the actions of the posterior lobe of the pituitary gland. 4

OR

c) Explain the physiology of respiration. 8
d) Give the structure and functions of the liver. 6
- 4 a) Outline the structure of the nephron and discuss the physiology of urine formation. 8
b) Explain the anatomy and physiology of skin. 6

OR

c) Discuss the structure and functions of the kidney. 8
d) Explain the anatomy and physiology of ear. 6
- 5 a) Write about deficiency disorders of water soluble vitamins. 8
b) Write a note on the following :
i) Thrombosis ii) Neoplasms 3+3

OR

c) Explain various types of birth control methods and compare their effectiveness. 10
d) Write a note on inflammation and repair. 4

B. Pharmacy I - Year (Main) Examination, June 2015

Subject : Pharmaceutical Inorganic Chemistry

Time : 3 hours

Max. Marks : 70

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

- 1 a) Classify inorganic pharmaceuticals based on their therapeutic applications with examples. 8
b) Give two characteristic tests for potassium and sulphate ions with reactions. 6
OR
c) What is an impurity? Explain how the impurities get incorporated in the official pharmaceutical substances. 1+7
d) Explain the principle and procedure involved in the limit test for i) Iron ii) lead 3+3
- 2 a) What are sodium replenishes? Write the method of preparation, and assay of sodium chloride. 1+4
b) Write a note on activated charcoal. 3
c) Mention the method of preparation and uses of i) Magnesium sulphate ii) Calcium gluconate 3+3
OR
d) What are antacids? Write the method of preparation, and tests for purity of i) Aluminium hydroxide gel ii) Sodium bicarbonate 1+8
e) Write a note on Hemodialysis fluids. 5
- 3 a) List out the official iron compounds used as Haematinics. Write the method of preparation, and assay of Ferrous fumarate. 2+4
b) Write a note on i) Silica gel ii) Purified water 4+4
OR
c) Mention the method of preparation and uses of i) Sodium bisulphate ii) Aluminium sulphate iii) Zinc chloride 3 x 3
d) Write a note on suspending agents. 5
- 4 a) Write the method of preparation and uses of i) sodium thiosulphate ii) Sodium thiosulphate injection 6
b) Mention the method of preparation, assay and uses of i) Ammonium chloride ii) Potassium antimony tartarate 4+4
OR
c) Give the method of preparation, properties and tests for purity for the following compounds. 8
i) zinc sulphate ii) potassium iodide
d) Write a note on Inhalants. 6
- 5 a) Explain the principle and procedure involved in the assay of i) Boric acid ii) Potassium permanganate 3+3
b) Mention the composition, properties and uses of i) Plaster of Paris ii) Activated Dimethicone 4+4
OR
c) Mention the method of preparation, properties and uses of i) Barium sulphate ii) Zinc oxide iii) Sodium fluoride 3 x 3
d) Write a note on Dentifrices. 5

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FACULTY OF PHARMACY

B. Pharmacy I - Year (Main) Examination, June 2015

Subject : Pharmaceutics-I (General and Dispensing Pharmacy)

Time : 3 hours

Max. Marks : 70

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

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|---|---|---|
| 1 | a) What is Pharmacopoeia? Write a brief note on Indian Pharmacopoeia. | 7 |
| | b) Write a brief note on Evolution of Pharmacy? | 7 |

OR

- | | |
|--|---|
| c) Write a short note on minimum weighable quantities. | 3 |
| d) Convert the following : | 8 |
| i) 60° UP and 42° OP to percentage v/v of alcohol | |
| ii) 40% v/v and 60% v/v alcohol to proof strength | |
| e) Prepare 400 ml of 45% alcohol from 95% alcohol | 3 |

- 2 a) Define prescription. Describe various parts of prescription with suitable examples. 8
b) Write a note on general dispensing procedures. 6

OR

- | | |
|--|---|
| c) Write a note on colors, flavors and sweeteners used in prescription. | 7 |
| d) Write a brief note on containers and closures used in dispensing of dosage forms. | 7 |

- | | | |
|---|--|---|
| 3 | a) What are mixtures? Classify different types of mixtures. Discuss general procedure for dispensing mixtures. | 6 |
| | b) What are Emulsions? Write the different types of emulsions and write methods of preparation of emulsions? Write a brief note on Emulsifying agents. | 8 |

OR

- c) Define the following dosage forms with examples.
i) Aromatic waters ii) Syrups iii) Suspensions iv) Lotions
v) Liniments vi) Inhalations vii) Gargles
- 4 a) Write a short note on : i) Effervescent granules ii) Cold cream
iii) Simple ointment
- b) What are suppositories? What are the different bases used in preparation of suppositories.

OR

- | | |
|---|----|
| c) Explain the physical and therapeutic incompatibility with suitable examples and give the methods for overcoming these incompatibilities? | 10 |
| d) Identify the type of incompatibility in the following prescription and add a note on how to overcome the incompatibility. | 4 |

Rx Ferric chloride solution – 2 ml, Sodium salicylate – 4 g.,
Water – up to 90.00 ml.

- 5 a) Explain the soxhlet extraction method with neat labeled diagram. 7
b) Explain double maceration and triple maceration processes. 7

OR

- | | |
|--|---|
| c) Write a note on diagnostic and therapeutic applications of radio pharmaceuticals. | 7 |
| d) Discuss about handling and storage of medicinal gases. | 7 |

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Subject : Mathematics

Time : 3 Hours

Max. Marks: 70

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

- 1 (a) Prove that $\log(a \cdot b) = \log a + \log b$.

(b) If $\frac{\tan 26^\circ + \tan 19^\circ}{x(1 - \tan 26^\circ \tan 19^\circ)} = \cos 60^\circ$, then find the value of x .

OR

- (c) If $\sec A + \tan A = P$, then find $\sin A$.

(d) If $a = \log_{24} 12$, $b = \log_{36} 24$ and $c = \log_{48} 36$, then. Find $1 + abc$.

- 2 (a) Find the $\lim_{x \rightarrow 0} \frac{1 - \cos 4x}{1 - \cos 2x}$

(b) If $u = \sin^{-1} \left(\frac{x^2 + y^2}{x + y} \right)$ show that $x \frac{\partial u}{\partial x} + y \frac{\partial u}{\partial y} = \tan u$.

OR

- (c) Find differentiation of $\sin x$ from the first principle.

(d) Find $\lim_{x \rightarrow 0} \frac{\sin x - \tan x}{x}$

- 3 (a) Evaluate $\int \frac{x^5}{1 + x^{12}} dx$

(b) Find the area bounded by the ellipse $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$.

OR

(c) Evaluate $\int \frac{3x + 7}{3x^2 + 14x - 5} dx$

(d) Show that the area of a loop of the curve $y^2 = x^2(4 - x^2)$ is $\frac{16}{3}$.

- 4 (a) If a, b, c are different and the determinant

$$\begin{vmatrix} a & a^2 & a^3 - 1 \\ b & b^2 & b^3 - 1 \\ c & c^2 & c^3 - 1 \end{vmatrix} = 0 \text{ then prove that } abc = 1.$$

- (b) Solve $x + 4y - 2z = 3$, $3x + y + 5z = 7$, $2x + 3y + z = 5$ by Gauss elimination method.

OR

- (c) Solve $3x + y - z = 0$, $5x + 2y - 3z = 2$, $15x + 6y - 9z = 5$ by Gauss elimination method.

- (d) Define determinant of a matrix and find A^{-1} if

$$A = \begin{bmatrix} 1 & 2 & 3 \\ 3 & 2 & 4 \\ 4 & 1 & 3 \end{bmatrix}$$

- 5 (a) Define linear and non-linear graphs with an example to each.

(b) Find the centre and radius of the circle $x^2 + y^2 + 4x + 6y + 4 = 0$.

OR

(c) Find the focus, vertex of the parabola $y^2 = 5x + 4y + 1$.

(d) Find the distance between the points $(-1, 1)$ and $(2, 3)$.

B. Pharmacy I-Year (Main) Examination, June 2015

Subject : Biology

Time : 3 Hours

Max. Marks: 70

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

- 1 (a) (i) Give brief classification of plant kingdom. (7)
(ii) Describe mitosis with the help of a neat and well labeled diagram. (7)
OR
(b) (i) Illustrate various types of root modifications with suitable examples. (7)
(ii) Describe plant cell wall and draw a neat and well labeled diagram. (7)
- 2 (a) (i) Give the classification of umbelliferae and list out the economic importance of its members. (7)
(ii) Give the botanical names of any three medicinal plants from Apocynaceae and Solanaceae. (7)
OR
(b) (i) Describe the vegetative and floral characteristics of Scrophulariaceae. (7)
(ii) List out any six medicinally important plants and their products from Leguminosae. (7)
- 3 (a) (i) Describe transpiration mechanism and its significance in plants. (7)
(ii) Write an essay on DNA replication. (7)
OR
(b) (i) Define mutation. Comment on its advantages and disadvantages. (7)
(ii) What is hybridization? Explain. (7)
- 4 (a) (i) List out differences and similarities between animal and plant cell. (7)
(ii) Describe the epithelial tissue and its derivatives in animal kingdom. (7)
OR
(b) (i) What are the hormones secreted by the pituitary gland? Give brief note on their clinical significance. (7)
(ii) Give the details of histology of liver. (7)
- 5 (a) (i) Describe the external morphology to tape worm. (7)
(ii) Mention about the symptoms, pathogenesis and clinical management of Malaria. (7)
OR
(b) (i) Give the details of life cycle of *Ascaris* sps. (7)
(ii) Describe the life history of housefly. (7)

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FACULTY OF PHARMACY

B. Pharmacy I - Year (Main) Examination, June 2015

Subject : Basic Computer Applications

Time : 3 hours

Max. Marks : 70

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

- 1 a) Draw block diagram of computer? Explain the components. 7
b) Write about the characteristics of computers. 7
OR
c) Explain different types of storage devices for computers. 7
d) What is the importance and features of operating system? 7
- 2 a) What are the different types of operators available in C-language? Explain them. 14
OR
b) Explain the control statements with examples. 14
i) IF – ELSE ii) FOR iii) Break and Continue
- 3 a) What are different tools available in MS-Office and explain them? 7
b) Write the basic formatting of word document using MS-Word. 7
OR
c) Explain charts and graphs with MS-Excel data. 7
d) Explain a spread sheet preparation and formatting the sheet using MS-Excel. 7
- 4 a) Write about the important features of MS-Power point. 7
b) Write notes on i) Transitions and Animations ii) Templates 7
OR
c) What is database? Write about different data types available in MS-Access? 7
d) Explain about the creation of table, creation of relationships between data in MS-Access. 7
- 5 a) Explain the following : 14
i) Search engine ii) HTML iii) Internet
iv) Pharmaceutical resources in WWW
OR
c) Write the features of SQL. Compare MS-Access and SQL server. 7
d) Give overview of reserved words in SQL. 7
