

S/12/11 A-NOLC

Code No.: 6501

FACULTY OF PHARMACY

B.Pharmacy I Year (Supplementary) Examination, December 2011

ANATOMY, PHYSIOLOGY AND HEALTH EDUCATION

Time : 3 Hours]

[Max. Marks : 70

Answer all questions.

All questions carry equal marks.

1. (a) (i) Explain the structure and functions of connective tissue. 10
(ii) Write about passive transport. 4
Or
(b) (i) Write about cranial sutures. 4
(ii) Describe the following bones with diagram. 10
(A) Lumbar bone (B) Femur
(C) Scapula (D) ulna
2. (a) (i) Discuss the anatomy of cerebrum with neat labelled diagram. 10
(ii) What are the functions of Medulla oblongata. 4
Or
(b) (i) What are the factors regulating erythropoiesis? 4
(ii) Discuss about Hemostasis. 10
3. (a) (i) Explain the phases of gastric juice secretion 6
(ii) Discuss about factors regulating respiration. 8
Or
(b) (i) Discuss about various movements of GIT. 4
(ii) Write about following : 10
(A) Diabetes Mellitus (B) Hypothyroidism.
4. (a) (i) Discuss the anatomy of eye with diagram. 14
Or
(b) (i) Discuss about physiology of hearing. 10
(ii) What are the functions of Kidney. 4

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[P.T.O.]

5. (a) (i) Write about oral contraceptives. 7
(ii) Explain about natural methods of contraception. 7

Or

- (b) (i) Discuss about inflammation. 7
(ii) Write about Neoplasms. 7
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18/12/11- A.NOK

Code No.: 6506

FACULTY OF PHARMACY

B.Pharmacy I Year (Supplementary) Examination, December 2011

BIOLOGY

Time : 3 Hours]

[Max. Marks : 70

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

1. (a) (i) Discuss the structure and functions of simple permanent tissue in plants. 7
(ii) Discuss mitosis - cell division in plants. 7
Or
(b) (i) Draw neat labelled diagram of flower and transfers section (T.S). 7
(ii) Discuss about root modification. 7
2. (a) (i) Describe the vegetative and floral characters of Leguminosae. 7
(ii) Give the economic and Medicinal importance of Apocynaceae. 7
Or
(b) (i) Discuss the taxonomy of Rubiaceae. 7
(ii) Give the floral formula, floral diagram and economic importance of solanaceae. 7
3. (a) (i) Write the mechanism of transpiration in plants. 7
(ii) Describe anaerobic respiration in plants. 7
Or
(b) (i) Explain about basis in DNA Replication. 7
(ii) Write a note on Polyploid. 7
4. (a) (i) Write about cell division. 7
(ii) Describe the arterial system of frog with neat labelled diagram. 7

Or

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- (b) (i) Draw and describe the Histology of Rabbit Pancrease. 7
- (ii) Differentiate between plant cell and animal cell. 7
5. (a) (i) Describe the life history of house fly. 7
- (ii) Describe the life cycle of tapeworm. 7
- Or
- (b) (i) Describe the life cycle of plasmodium. 7
- (ii) Write about the life cycle of Ascaris. 7
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FACULTY OF PHARMACY**B. Pharmacy I Year (Supplementary) Examination, November/December 2011****BASIC COMPUTER APPLICATIONS**

Time : 3 Hours]

[Max. Marks : 70

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

1. (a) (i) Draw the block diagram of computer and explain the components in detail.
(ii) Write the principles and symbols of flowchart.
(iii) Draw the flowchart to find sum and average of four numbers.

Or

- (b) (i) Write the features of MS-DOS, Unix in detail.
(ii) What is virus? Why virus effects the computer and how it is resolved?
2. (a) (i) Write the data types, operators and Input-Output statements in C-Language.
(ii) Write the application of library functions and arrays.

Or

- (b) (i) Write a C-Program to find the sum of a elements in a 3 x 3 matrix.
(ii) Write the difference between Break, continue and GOTO statements.
3. (a) (i) Write the basic formatting types for a word document.
(ii) Write the formulas in MS-Excel Sheet used for numerical data.

Or

- (b) (i) What are features of MS-Excel when compared with MS-Word?
(ii) How graphs and charts are used to represent numerical data?
4. (a) (i) Define file, record and linking.
(ii) Write the features of MS-Power Point.

Or

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- (b) (i) Write a procedure to create a table and apply sorting technique.
(ii) Define forms, subforms and import and export. Explain.
5. (a) (i) Write the structure and organization of WWW and its features.
(ii) Write short note on HTML and E-mail.

Or

- (b) (i) Write the different types of indexing tools and search engines.
(ii) Write features of SQL. Write the SQL - Commands.
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13/12/11 - AN - OLC

Code No.: 6503

FACULTY OF PHARMACY

B.Pharmacy I Year (Supplementary) Examination, December 2011

PHARMACEUTICS - I (GENERAL AND DISPENSING PHARMACY)

Time : 3 Hours]

[Max. Marks : 70

Answer all questions.

All questions carry equal marks.

1. (a) What are the ideal weighing techniques used for minimizing errors during weighing. 7
- (b) Describe the historical developments of American pharmacy. 7
- Or
- (c) Write a note on Minimum weighable amounts. 5
- (d) Calculate the quantities of 50% V/V and 25% V/V alcohol required to prepare 175 ml of 42% V/V alcohol by alligation method. 3
- (e) Convert the following 6
 - (i) 75° UP and 42°OP to percentage V/V of alcohol.
 - (ii) 80% V/V and 47.31% V/V to proof strength.
2. (a) Write a note on commonly used colours, flavours and sweeteners in dispensing of prescription. 9
- (b) What are the desirable qualities of container for packing of pharmaceuticals. 5
- Or
- (c) Discuss in detail about dispensing of proprietary medicines. 7
- (d) Write a note on general dispensing procedures. 7
3. (a) What are syrups? How they differ from elixirs? Write in brief the different methods of preparation of syrups with suitable examples. 8
- (b) Differentiate between : 6
 - (i) Emulsions and suspensions.
 - (ii) Gargles and throat paints.

Or

[P.T.O.]

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- (c) What are mixtures? Classify different types of mixtures. Discuss the formulation of mixtures. 7
- (d) Write a note on emulsifying agents. 7
4. (a) Discuss in brief about the different bases used in the preparation of ointments. 8
- (b) Write a note on : 6
- (i) Lozenges
- (ii) Pills.

Or

- (c) Discuss about chemical incompatibilities causing evolution of CO_2 with suitable examples. 7
- (d) Write a note on : 7
- (i) Displacement value
- (ii) Jellies.
5. (a) Explain the Soxhlet Extraction method with a neat labelled diagram. 7
- (b) Discuss in brief about safety measures and precautions while handling medicinal gases. 7

Or

- (c) Explain Double Maceration and Triple Maceration processes. 7
- (d) Write a note on therapeutic applications of radio pharmaceuticals. 7
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9/12/11 A.N.O.K

Code No.: 6502

FACULTY OF PHARMACY

B. Pharmacy I Year (Supplementary) Examination, November/December 2011

PHARMACEUTICAL INORGANIC CHEMISTRY

Time : 3 Hours]

[Max. Marks : 70

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

1. (a) (i) Explain the principle and procedure involved in the limit test for Heavy metals. 8
(ii) Give the two characteristic tests for two anions and two cations. 6

Or

- (b) (i) Classify Pharmaceutical Inorganic compounds based on their applications with examples. 8
(ii) Give the principle and procedure involved in the limit test for sulphates and chlorides. 6
2. (a) (i) Give the preparation, properties and uses of magnesium hydroxide and calcium carbonate. 10
(ii) Write a brief note on Acid base regulators. 6

Or

- (b) (i) What are Adsorbents? Write a note on Light Kaolin. 6
(ii) Give the principle and procedures involved in the assay of (A) Calcium gluconate (B) Magnesium Oxide.
3. (a) (i) What are suspending agents? Write a note on Bentonite. 7
(ii) Write a note on Excipients. 7
- (b) (i) Write the preparation and uses of Sodium metabisulphite and Sodium Phosphate. 6
(ii) Write a brief note on purified water. 8

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[P.T.O.]

4. (a) (i) What are expectorants? Give the preparation, tests for purity and essay of Ammonium Chloride. 8

(ii) Write a note on Inhalants. 6

Or

(b) (i) Write the preparation properties and uses of Sodium Thiosulphate and copper sulphate. 8

(ii) Give the principle and procedure involved in the Assay of Potassium Antimonyl Tartrate. 6

5. (a) (i) Write a note on Antidepressants? 6

(ii) Give the preparation and uses of 9

(A) Calcium phosphate.

(B) Barium Sulphate.

(C) Potassium bromide

Or

(b) (i) Write the principle and procedure involved in the assay of boric acid and Zinc oxide. 8

(ii) Write a note on Dentifrices. 6

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FACULTY OF PHARMACY

B.Pharmacy I Year (Supplementary) Examination, December 2011

MATHEMATICS

Time : 3 Hours]

[Max. Marks : 70

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

1. (a) (i) If $\frac{\log 2^a}{4} = \frac{\log 2^b}{6} = \frac{\log 2^c}{3p}$ and $a^3 b^2 c = 1$, find the value of P .

(ii) If $\tan A = 1/2$ and $\tan B = 1/3$, where A and B are acute angles then find $A+B$.

Or

(b) (i) If $2\log x^a + \log ax^a + 3\log a^2 x^a = 0$, find x .

(ii) $\sin A \cdot \sin(60+A) \sin(60-A) = \frac{1}{4} \sin 3A$.

2. (a) (i) Find the derivative of the function $\cos ax$ using first principle.

(ii) Show that $f(x) = \begin{cases} \frac{\cos ax - \cos bx}{x^2} & \text{if } x \neq 0 \\ \frac{b^2 - a^2}{2} & \text{if } x = 0 \end{cases}$

where a and b are real constants, is continuous at 0.

(iii) Solve $\frac{dy}{dx} = \sin(x+y) + \cos(x+y)$.

Or

(b) (i) Show that $f(x) = \sin x (1 + \cos x)$ has a maximum value at $x = \pi/3$.

(ii) If $u = \sec^{-1} \left[\frac{x^3 - y^3}{x + y} \right]$ then show that

$$x \frac{\partial u}{\partial x} + y \frac{\partial u}{\partial y} = 2 \cot u.$$

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[P.T.O.]

3. (a) (i) Find the value of $\int \frac{dx}{(1+x)\sqrt{3+2x-x^2}}$.

(ii) Evaluate $\int \frac{9\cos x - \sin x}{4\sin x + 5\cos x} dx$.

(iii) Evaluate $\int \frac{e^x(1+x)}{\cos^2(xe^x)} dx$. ($x \in \mathbb{R}; \cos(xe^x) \neq 0$).

Or

(b) (i) Evaluate $\int \frac{1 + \sin x}{x + \cos^x} dx$.

(ii) Evaluate $\int \frac{\sin 2x}{a \cos^2 x + b \sin^2 x} dx$. ($x \in \mathbb{R}; a \cos^2 x + b \sin^2 x \neq 0$)

(iii) Evaluate $\int \left(\frac{x^6 - 1}{1 + x^2} \right) dx$ for $x \in \mathbb{R}$.

4. (a) (i) Show that $\begin{vmatrix} b+c & c+a & a+b \\ a+b & b+c & c+a \\ a & b & c \end{vmatrix} = a^3 + b^3 + c^3 - 3abc$.

(ii) If $A = \begin{bmatrix} 3 & -3 & 4 \\ 2 & -3 & 4 \\ 0 & -1 & 1 \end{bmatrix}$ then show that $A^{-1} = A^3$.

Or

(b) (i) Solve the following equations by Gauss-Jordan method.

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

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

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

(ii) If $\theta - \phi = \pi/2$, then show that

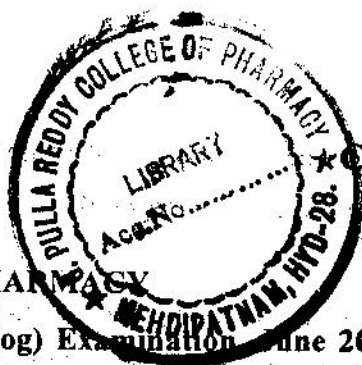
$$\begin{bmatrix} \cos^2 \theta & \cos \theta \sin \theta \\ \cos \theta \sin \theta & \sin^2 \theta \end{bmatrix} \begin{bmatrix} \cos^2 \phi & \cos \phi \sin \phi \\ \cos \phi \sin \phi & \sin^2 \phi \end{bmatrix} = 0$$

5. (a) (i) Find the equation of the line passing through (2, 0) (0, 3).
(ii) If a line makes an angle of 60° with positive x - axis, what is its slope.
(iii) Discuss the set of postulates defining Boolean Algebra.

Or

- (b) (i) Write Boolean function to realize the full adder and draw the corresponding logic diagram.
(ii) Find the equation of the circle passing through the origin 0 (0,0) and the points (1, 2), (-1, -2)
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MEHDIPATNAM. HYD-23.



Code No. 4401

FACULTY OF PHARMACY

B. Pharmacy I-Year (Main & Backlog) Examination June 2011

ANATOMY, PHYSIOLOGY AND HEALTH EDUCATION (APHE)

Time : Three Hours]

[Maximum Marks : 70

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

1. (A) (i) Discuss the properties and functions of nervous tissue. 8
 (ii) Write a note on action potential. 6

OR

- (B) (i) Explain the various parts of the following bones with diagrams :
 (a) Femur (b) Ulna
 (c) Fibula (d) Thoracic. 8
 (ii) Discuss the functions of epithelial tissue. 6
2. (A) (i) Define cardiac cycle and describe the events involved in a cardiac cycle. 8
 (ii) Explain the following terms :
 (a) Neuron (b) Reflex arc
 (c) Ganglion. 6

OR

- (B) (i) Discuss the composition and functions of blood. 8
 (ii) What are the factors affecting blood pressure ? 6
3. (A) (i) Discuss the anatomy of respiratory system. 10
 (ii) Disorders of hypo and hypersecretion of thyroid gland. 4

OR

- (B) (i) Discuss the Physiology of respiration. 10
 (ii) Write a note on functions of pancreas. 4

4. (A) (i) What are expectorants ? Give the preparation, tests for purity and assay of Potassium Iodide. 8
(ii) Write a note on Inhalants. 6

OR

- (B) (i) Give the method of preparation and uses of :
(a) Potassium Antimony Tartrate
(b) Sodium Thiosulphate
(c) Zinc Sulphate. 9
(ii) Write a note on emetics. 5
5. (A) (i) Write a note on Diagnostic agents. 5
(ii) Give the principle and procedure involved in the assay of :
(a) Silver nitrate
(b) Zinc oxide
(c) Bismuth subcarbonate. 9

OR

- (B) (i) Give the method of preparation and uses of Potassium Permanganate and Cisplatin. 8
(ii) Write a note on oral antiseptics. 6

FACULTY OF PHARMACY

B. Pharmacy I-Year (Main & Backlog) Examination, June 2011

BASIC COMPUTER APPLICATIONS

Time : Three Hours]

[Maximum Marks : 70

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

1. (A) (i) Explain the basic structure and characteristics of computers.
 (ii) Give the detailed account of any operating system and its importance.

OR

- (B) (i) State the rules for drawing the flow chart. Draw a flow chart for examining the given number is a prime number or not.
 (ii) Discuss the importance of the various input and output devices.
2. (A) (i) Explain all the control statements with suitable example.
 (ii) Write the types of Input/Output and Control I/O functions used in C.

OR

- (B) (i) What are the arrays ? Explain the pointers to an array.
 (ii) Why we use functions ? Explain with an example.
3. (A) (i) What are the tools available in MS-Office ? Explain.
 (ii) Explain the important features of MS-Word.

OR

- (B) (i) List and explain different data types in MS-Excel.
 (ii) What is the formatting in MS-Excel ? Briefly explain about charts and graphs.
- (A) (i) Explain the powerpoint basics and views.
 (ii) Briefly discuss about the transitions and animations.

OR

(B) Write short notes on the following :—

- (i) Table Relationships
- (ii) Sorting and Filtering
- (iii) Forms and Form Controls.

5. (A) Explain the following :—

- (i) HTML
- (ii) Internet browser
- (iii) Pharmaceutical resources in WWW
- (iv) Search Strategies.

OR

(B) (i) Briefly explain SQL Commands.

(ii) Write about Chemical data design and their tools.

FACULTY OF PHARMACY
B. Pharmacy I-Year (Main & Backlog) Examination, June 2011
BIOLOGY

Time : Three Hours]

[Maximum Marks : 70]

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

1. (A) (i) Discuss about the non-living cell inclusions of plant cell. 7
(ii) Discuss mitosis-cell division in plants. 7

OR

- (B) (i) Describe and draw the morphology and Histology of fruit. 7
(ii) Discuss about root modification. 7
2. (A) (i) Describe the vegetative, floral diagram and floral formula for umbelliferae. 7
(ii) Furnish the economic and medicinal importance of scrophulariaceae. 7

OR

- (B) (i) Discuss the taxonomy of Umbelliferae. 7
(ii) Describe the vegetative and floral characters of Rubiaceae. 7
3. (A) (i) Write the importance of transpiration in plants. 7
(ii) Write about photosynthesis. 7

OR

- (B) (i) Describe replication of DNA. 7
(ii) Write a note on Hybridization. 7
4. (A) (i) Describe and draw neat labelled diagram of plant cell and animal cell. 7
(ii) Draw neat labelled diagram of digestive system of frog. 7

OR

- (B) (i) Draw the Transverse Section (T.S.) of rabbit liver and explain about it. 7
(ii) Write about cell division. 7
5. (A) Describe the life cycle of plasmodium. 14

OR

- (B) (i) Describe the life history of Mosquitoes. 7
(ii) Describe the life cycle of Entamoeba. 7

FACULTY OF PHARMACY

B. Pharmacy I-Year (Main & Backlog) Examination, June 2011
PHARMACEUTICS—I (GENERAL & DISPENSING PHARMACY)

Time : Three Hours]

[Maximum Marks : 70

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

1. (A) Write a note on American Pharmacy. 6
(B) Define proof spirit. 2
(C) Calculate the dose for a 8 year boy. (Adult dose of Metronidazole is 400 mg). 8

OR

- (D) Mention the various official books of standards and explain the salient differences between them. 10
(E) Convert the following :

75° O.P., 17° O.P. to percentages of alcohol and 60% V/V, 80% V/V to proof spirit.

2. (A) Discuss different parts of a prescription. 6
(B) Describe the prescription container and write the advantages and disadvantages. 8

OR

- (C) Write a note on labeling of dispensed products. 8
(D) Discuss in brief about Monophasic liquid dosage form and classify them with examples. 8

3. (A) Classify emulsifying agent with suitable examples and write the importance of Stoke's law. 10

- (B) Write the differences between the following :

(i) Lotions Vs Liniments (ii) Throatpaints Vs Gargles. 6

OR

- (C) Write a note on Suspension and their preparation. 7
(D) Write a note on : (i) Inhalations, (ii) Mintures, (iii) Eliners. 9

4. (A) How do you dispense the following preparation ?

R_x quinine SO₄ — 2 gm

HCl — 2 ml

KI — 0.5 gm

Water upto — 15 ml.

- (B) Classify ointment bases with suitable examples and write the importance of effervescent granules.

6

OR

10

- (C) What are therapeutic incompatibilities ? Explain them with suitable examples and methods to overcome the incompatibilities.

8

- (D) Define ointments. Write the principle and procedure for white field ointment.

8

5. (A) Write a note on Double maceration process with suitable example.

8

- (B) Discuss in detail about official medical gases and their uses.

8

OR

- (C) Write a note on diagnostic uses of Radiopharmaceuticals.

8

- (D) Write the principle and procedure for bellodona tincture.

8

FACULTY OF PHARMACY

B. Pharmacy I-Year (Main & Backlog) Examination, June 2011

PHARMACEUTICAL INORGANIC CHEMISTRY

Time : Three Hours]

[Maximum Marks : 70

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

1. (A) (i) Explain the principle and procedure involved in the limit test for iron. 8
(ii) Give the two characteristic tests for sodium and calcium. 6

OR

- (B) (i) Classify Pharmaceutical Inorganic compounds based on their applications with examples. 8
(ii) Give the principle and procedure involved in the limit test for Heavy metals. 6

2. (A) (i) Give the preparation, properties and uses of sodium citrate and Ammonium chloride. 10
(ii) Write a brief note on intraperitoneal dialysis of fluids. 4

OR

- (B) (i) What are laxatives ? Give the principle and procedure involved in the Assay of Magnesium Sulphate. 8
(ii) Give the preparation, test for purity and uses of Magnesium oxide. 6

3. (A) (i) What are Haematinics ? Give the preparation, test for purity and uses of Ferric ammonium citrate. 8
(ii) Write a brief note on Activated charcoal. 6

OR

- (B) (i) Define Desiccants with examples. Give the preparation, properties, test for purity of Silica gel. 8
(ii) Write a note on Bentonite. 6

4. (A) (i) What are expectorants ? Give the preparation, tests for purity and assay of Potassium Iodide. 8
- (ii) Write a note on Inhalants. 6

OR

- (B) (i) Give the method of preparation and uses of :
- (a) Potassium Antimony Tartrate
- (b) Sodium Thiosulphate
- (c) Zinc Sulphate. 9
- (ii) Write a note on emetics. 5
5. (A) (i) Write a note on Diagnostic agents. 5
- (ii) Give the principle and procedure involved in the assay of :
- (a) Silver nitrate
- (b) Zinc oxide
- (c) Bismuth subcarbonate. 9

OR

- (B) (i) Give the method of preparation and uses of Potassium Permanganate and Cisplatin. 8
- (ii) Write a note on oral antiseptics. 6

FACULTY OF PHARMACY
B. Pharmacy I-Year (Main & Backlog) Examination, June 2011
MATHEMATICS

Time : Three Hours]

[Maximum Marks : 70

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

1. ~~(A)~~ (i) If $\sin \alpha = \frac{1}{\sqrt{10}}$, $\sin \beta = \frac{1}{\sqrt{5}}$ and α, β are acute then show that $\alpha + \beta = \frac{\pi}{4}$.

~~(ii)~~ If $\tan A = \frac{1}{2}$ and $\tan B = \frac{1}{3}$ where A and B are acute angles then find $A + B$.

OR

~~(B)~~ (i) $\sin A \cdot \sin (60 + A) \sin (60 - A) = \frac{1}{4} \sin 3A$.

~~(ii)~~ Prove that $4 \sin 20^\circ \sin 40^\circ \sin 60^\circ \sin 80^\circ = \frac{3}{4}$.

2. (A) ~~(i)~~ Find the derivatives of the following function $\tan 2x$ using first principle.

(ii) If $U = \sec^{-1} \left(\frac{x^3 - y^3}{x + y} \right)$ then show that $x \frac{\delta u}{\delta x} + y \frac{\delta u}{\delta y} = 2 \cot u$.

(iii) If f , given by $f(x) = \begin{cases} K^2x - K & \text{if } x \geq 1 \\ 2 & \text{if } x < 1, \end{cases}$ is a continuous function on \mathbb{R} , then find the value of K .

OR

~~(B)~~ (i) Prove that $x^3 - 3x^2 + 3x + 7 = 0$, has neither maxima nor minima.

~~(ii)~~ Show that $f(x) = \sin x (1 + \cos x)$ has a maximum value at $x = \frac{\pi}{3}$.

3. (A) (i) Find the value of $\int \frac{\cos x + 3 \sin x + 7}{\cos x + \sin x + 1} dx$.

(ii) Evaluate $\int \frac{2 \sin x + 3 \cos x + 4}{3 \sin x + 4 \cos x + 5} dx$.

(iii) Evaluate $\int \frac{dx}{4 + 5 \cos x}$.

OR

(B) (i) Evaluate $\int \frac{1 + \sin x}{x + \cos x} dx$.

(ii) Evaluate $\int \frac{2x + 3}{x^3 + x^2 - 2x} dx$.

(iii) Evaluate $\int \sec^2 x \operatorname{cosec}^2 x dx$.

4. (A) (i) Show that $\begin{vmatrix} 1 & a^2 & a^3 \\ 1 & b^2 & b^3 \\ 1 & c^2 & c^3 \end{vmatrix} = (a - b)(b - c)(c - a)(ab + bc + ca)$.

(ii) Show that $\begin{vmatrix} a+b+2c & a & b \\ c & b+c+2a & b \\ c & a & c+a+2b \end{vmatrix} = 2(a + b + c)^3$.

OR

(B) (i) Solve the following equations by Gauss-Jordan method :

$$3x + 4y + 5z = 18, 2x - y + 8z = 13, 5x - 2y + 7z = 20.$$

(ii) If $A = \begin{bmatrix} 1 & -2 & 1 \\ 0 & 1 & -1 \\ 3 & -1 & 1 \end{bmatrix}$ then find $A^3 - 3A^2 - A - 3I$.

5. (A) (i) Discuss the set of Postulates defining Boolean Algebra.
- (ii) Find the eccentricity, co-ordinates of foci, length of latus rectum and equations of directrices of the ellipse.

$$9x^2 + 16y^2 - 36x + 32y - 92 = 0.$$

OR

- (B) (i) Find the intercepts of the plane $4x + 3y + 2z + 2 = 0$ on the co-ordinate axes.
- (ii) Write Boolean function to realize the full adder and draw the corresponding logic diagram.