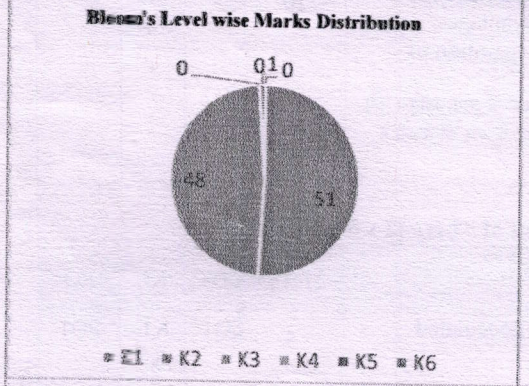
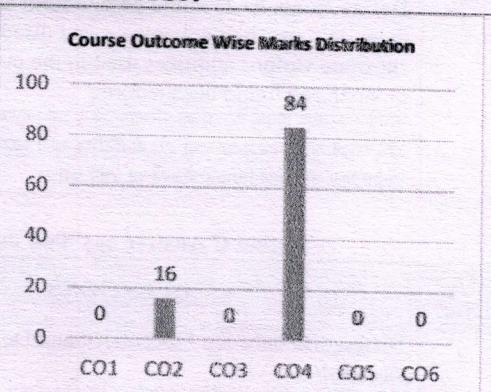
CO- Course Outcomes, **KL**- Knowledge Level, **PO** – Program Outcome

Course Outcomes	CO1	Remember the history of profession of pharmacy
	CO2	Understand the basics of different dosage forms, pharmaceutical incompatibilities and pharmaceutical calculations
	CO3	Apply the professional way of handling the prescription
	CO4	Apply the knowledge of various conventional dosage forms
	CO5	Understand various pharmaceutical incompatibilities and formulation techniques of suppositories
	CO6	Apply basic methodology to prepare various conventional semisolid dosage forms

GRAPHICAL REPRESENTATION





ARKA JAIN University Jharkhand | NAAC GRADE A ACCREDITED UNIVERSITY

2nd INTERNAL EXAMINATION
School of Pharmacy

Branch	**B. Pharmacy**	**Program**	**Pharmacy**
Subject Name	**Pharmaceutics I (Theory)**	**Semester**	**I**
		Year	**November 2025**

Time: 1 Hour Max. Marks : 30

- **Answer all Questions of Section A (Compulsory)**
- **Answer Any *One* out of *Two* of Section B**
- **Answer Any *Two* out of *Three* of Section C**
- **Possession of Mobile Phones or any kind of Written Material, Arguments with the Invigilator or Discussing with Co-Student will comes under Unfair Means and will Result in the Cancellation of the Papers.**

Knowledge Level (KL)	**K1 :** Remembering	**K3 :** Applying	**K5 :** Evaluating
	K2 : Understanding	**K4 :** Analysing	**K6 :** Creating

Section A (Each question Carry 01 Marks from Q1-i to Q1-x) – 10 Marks

Q. N 1	QUESTIONS	Marks	COs	KL	PO
i	*Co-solvency* technique enhances solubility by: A. Decreasing solvent polarity B. Increasing drug particle size C. Reducing pH D. Increasing viscosity सह-सॉल्वेंसी तकनीक घुलनशीलता को बढ़ाती है: A. विलायक ध्रुवता को कम करना B. दवा के कण का आकार बढ़ाना C. पीएच को कम करना D. बढ़ती चिपचिपाहट	1	CO2	K1, K2	PO1, PO2
ii	The concentration of sucrose in a simple syrup IP is about: A. **20% w/v** B. **66.7% v/v** C. **66.7% w/w** D. **80% v/v** एक साधारण सिरप आईपी में सुक्रोज की सांद्रता के बारे में है: A. 20% w/v B. 66.7% v/v C. 66.7% w/v D. 80% v/v	1	CO4	K1	PO2
iii	*Elixirs* are: A. Sweetened hydroalcoholic solutions B. Concentrated sugar solutions C. Oily suspensions D. Semi-solid emulsions अमृत (एलिक्सिर) क्या होते हैं? A. मीठे हाइड्रोअल्कोहलिक घोल B. सांद्रित चीनी घोल C. तैलीय निलंबन D. अर्ध-ठोस इमल्शन	1	CO2	K1	PO1
iv	Suspensions are suitable for: A. Insoluble drugs B. Volatile drugs C. Oils only D. Aqueous soluble salts	1	CO2	K1	PO1

	निलंबन इसके लिए उपयुक्त हैं: A.अधुलनशील दवाएं B.वाष्पशील दवाएं C.केवल तेल D.जलीय घुलनशील लवण				
v	The process of particles settling at the bottom in suspensions is called: A. Sedimentation B. Flocculation C. Coalescence D. Syneresis निलंबन में नीचे बसने वाले कणों की प्रक्रिया को क्या कहा जाता है? A. अवसादन B. फ्लोक्यूलेशन C. सहसंयोजन D. सिनेरेसिस	1	CO2	K1	PO1
vi	The *zeta potential* affects: A. Colour of suspension B. Sedimentation rate and flocculation C. Odor D. pH जीटा क्षमता प्रभावित करती है: A. निलंबन का रंग B. अवसादन दर और फ्लोक्यूलेशन C. गंध D. पीएच	1	CO2	K1, K2	PO1, PO2
vii	*Geometric dilution* is used when: A. Mixing equal quantities of powders B. A potent drug is mixed with a large amount of diluent C. Drying powders D. Compressing powders into tablets ज्यामितीय कमजोर पड़ने का उपयोग तब किया जाता है जब: A.समान मात्रा में पाउडर मिलाना B.एक शक्तिशाली दवा को बड़ी मात्रा में मंदक के साथ मिलाया जाता है C. सुखाने वाले पाउडर D. पाउडर को गोलियों में संपीड़ित करना	1	CO2	K1, K2	PO1, PO2
viii	Strength of 80% v/v alcohol in terms of proof spirit is: A. **40.24 OP** B. **35.27 UP** C. **40.24 UP** D. **35.27 OP** प्रूफ स्पिरिट के संदर्भ में 80% v/v अल्कोहल की ताकत क्या है? ए.40.24 ओपी B. 35.27 यूपी C. 40.24 यूपी D. 35.27 ऑप	1	CO2	K2, K5	PO1, PO2
ix	The *conductivity test* distinguishes emulsions because: A.O/W emulsions conduct electricity B. W/O emulsions conduct electricity C. Both conducts equally D. None conduct electricity चालकता परीक्षण इमल्शन को अलग करता है क्योंकि: A. O/W इमल्शन विद्युत का संचालन करते हैं B. W/O इमल्शन विद्युत का संचालन करते हैं C. दोनों समान रूप से आचरण करते हैं D. कोई भी बिजली का संचालन नहीं करता है	1	CO4	K2	PO2
x	The process of converting smaller droplets into larger ones in emulsions is called: A. Coalescence B. Flocculation C. Caking D. Cracking	1	CO4	K1	PO1
	इमल्शन में छोटी बूंदों को बड़े बूंदों में परिवर्तित करने की प्रक्रिया को क्या कहा जाता है? A. सहसंयोजन B. फ्लोक्यूलेशन C. कैकिंग D. क्रैकिंग				

Section B Answer any One out of Two [1 x 10 = 10 Marks]

Q. No.	QUESTIONS	Marks	COs	KL	PO
2	Define Emulsion. Explain various identification tests for emulsion. Mention the different stability problems related to emulsions. इमल्शन को परिभाषित करें। पायस के लिए विभिन्न पहचान परीक्षणों की व्याख्या कीजिए। इमल्शन से संबंधित विभिन्न स्थिरता समस्याओं की व्याख्या करें।	10	CO4	K1, K2	PO1
3	Define monophasic liquid dosage form and classify them. Discuss their advantages and disadvantages. Illustrate various additives used in the preparation of monophasic liquid dosage form. मोनोफैसिक तरल खुराक के रूप को परिभाषित करें। उन्हें उदाहरणों के साथ वर्गीकृत करें। उनके फायदे और नुकसान पर चर्चा करें। मोनोफैसिक तरल खुराक के रूप की तैयारी में उपयोग किए जाने वाले विभिन्न योजकों का वर्णन करें।	10	CO4	K1, K2	PO1

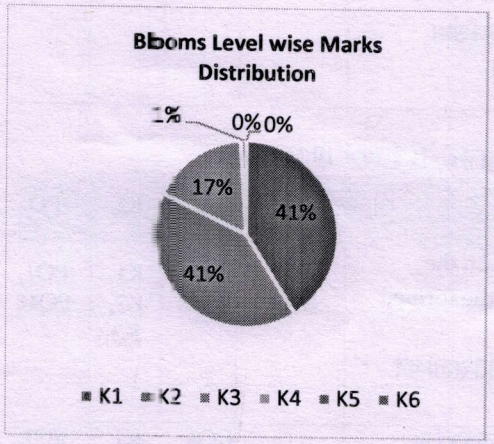
Section C Answer any Two out of Three [2 x 5 = 10 Marks]

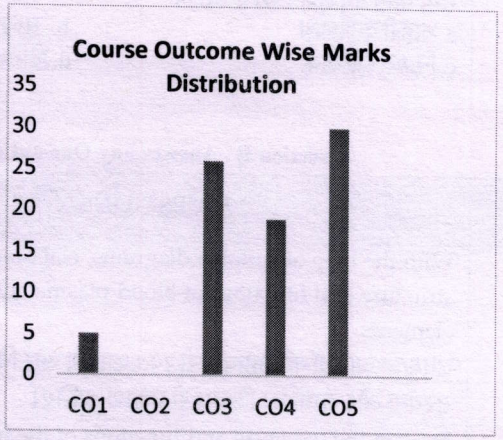
Q. No.	QUESTIONS	Marks	COs	KL	PO
4	Distinguish between Flocculated and Deflocculated suspension. फ्लोक्यूलेटेड और डिफ्लोक्यूलेटेड सस्पेंशन के बीच अंतर करें।	5	CO4	K1, K2	PO1
5	Explain any five additives used in the formulation of suspensions. सस्पेंशन के निर्माण में उपयोग किए जाने वाले किन्हीं पांच योजकों की व्याख्या कीजिए।	5	CO4	K1, K2	PO1
6	Differentiate between: - **(i)** Mouth washes and gargles **(ii)** Lotion and Liniment इनमें अंतर करें: - (i) माउथ वॉश और गार्गल (ii) लोशन और लिनिमेंट	5	CO4	K1, K2	PO1

CO- Course Cutcomes, KL- Knowledge Level, PO – Program Outcome

Course Outcomes	CO1	Explains the gross morphology, structure and functions of various organs of the human body
	CO2	Describe the various homeostatic mechanisms and their imbalances.
	CO3	Identify the various tissues and organs of different systems of human body.
	CO4	Perform the various experiments related to special senses and nervous system.
	CO5	Appreciate coordinated working pattern of different organs of each system.

GRAPHICAL REPRESENTATION





ARKA JAIN University Jharkhand — NAAC GRADE A ACCREDITED UNIVERSITY

2nd INTERNAL EXAMINATION
School of Pharmacy

Branch	**B. Pharmacy**	**Program**	**Pharmacy**
Subject Name	**Human Anatomy and Physiology I (Theory)**	**Semester**	**I**
		Year	**November 2025**
Time: 1 Hour Max. Marks : 30	• **Answer all Questions of Section A (Compulsory)** • **Answer Any *One* out of *Two* of Section B** • **Answer Any *Two* out of *Three* of Section C** • **Possession of Mobile Phones or any kind of Written Material, Arguments with the Invigilator or Discussing with Co-Student will comes under Unfair Means and will Result in the Cancellation of the Papers.**		
Knowledge Level (KL)	**K1 :** Remembering	**K3 :** Applying	**K5 :** Evaluating
	K2 : Understanding	**K4 :** Analysing	**K6 :** Creating

Section A (Each question Carry 01 Marks from Q1-i to Q1-x) – 10 Marks

Q. N 1	QUESTIONS	Marks	COs	KL	PO
i	Which of the following is the major protein responsible for blood clotting? a. Albumin b. Globulin c. Fibrinogen d. Haemoglobin निम्नलिखित में से कौन सा प्रोटीन रक्त के थक्के के लिए उत्तरदायी है? a. एल्बुमिन b. ग्लोब्युलिन c. फाइब्रिनोजेन d. हीमोग्लोबिन	1	CO1, CO3	K1, K2	PO1
ii	Which blood cell type is responsible for the transport of respiratory gases? a. Leukocytes b. Platelets c. Erythrocytes d. Monocytes श्वसन गैसों के परिवहन के लिए कौन सी रक्त कोशिका प्रकार जिम्मेदार है? a. ल्यूकोसाइट्स b. प्लेटलेट्स c. एरिथ्रोसाइट्स d. मोनोसाइट्स	1	CO1, CO3	K1, K2	PO1
iii	A person with blood group 'O' can donate blood to individuals of any group because: a. O group has both antigens A and B b. O group lacks both A and B antigens c. O group has both antibodies d. O group has Rh antigen	1	CO1, CO3	K1, K2, K4	PO1

	रक्त समूह 'O' वाला व्यक्ति किसी भी समूह के व्यक्ति को रक्तदान कर सकता है क्योंकि: a. O समूह में A और B दोनों प्रतिजन होते हैं b. O समूह में A और B दोनों प्रतिजन नहीं होते c. O समूह में दोनों प्रतिपिंड होते हैं d. O समूह में Rh प्रतिजन होता है				
iv	Calcium ions play an important role in: a. Haemoglobin synthesis b. Blood clotting c. Antibody production d. Osmotic balance कैल्शियम आयन निम्नलिखित में महत्वपूर्ण भूमिका निभाते हैं: a. हीमोग्लोबिन संश्लेषण b. रक्त का थक्का जमना c. एंटीबॉडी उत्पादन d. आसमाटिक संतुलन	1	CO1, CO3	K1, K2	PO1
v	The enzyme that converts fibrinogen to fibrin during blood clotting is: a) Thrombin b) Fibrinase c) Plasmin d) Pepsin रक्त के थक्के जमने के दौरान फाइब्रिनोजेन को फाइब्रिन में परिवर्तित करने वाला एंजाइम है: a. थ्रोम्बिन b. फाइब्रिनेज c. प्लास्मिन d. पेप्सिन	1	CO3	K1, K2	PO1
vi	The lymphatic system returns excess tissue fluid to the: a. Arteries b. Veins c. Heart chambers directly d. Capillaries लसीका तंत्र अतिरिक्त ऊतक द्रव को सीधे कहाँ लौटाता है: a. धमनियाँ b. शिराएँ c. हृदय कक्ष d. केशिकाएँ	1	CO1, CO3	K1, K2	PO1
vii	The optic nerve is responsible for: a. Hearing b. Smell c. Vision d. Taste दृष्टि तंत्रिका किसके लिए उत्तरदायी है: a. श्रवण b. गंध c. दृष्टि d. स्वाद	1	CO4	K1, K2	PO
viii	How many pairs of spinal nerves arise from the spinal cord? a. 10 b. 12 c. 31 d. 44 रीढ़ की हड्डी से कितने जोड़े रीढ़ की हड्डी की तंत्रिकाएँ निकलती हैं? a. 10 b. 12 c. 31 d. 44	1	CO4	K1, K2	PO
ix	Which neurotransmitter is released by postganglionic sympathetic fibres? a. Dopamine b. Serotonin c. Noradrenaline (norepinephrine) d. Acetylcholine पोस्टगैंग्लिओनिक सिम्पैथेटिक तंतुओं द्वारा कौन सा न्यूरोट्रांसमीटर स्रावित होता है? a. डोपामाइन b. सेरोटोनिन c. नॉरएड्रेनालाईन (नॉरएपिनेफ्रिन) d. एसिटाइलकोलाइन	1	CO4	K1, K2	PO1
x	Inflammation of the middle ear is called: a. Otitis externa b. Otitis media c. Myopia d. Tinnitus मध्य कान की सूजन को कहते हैं: a. बाहरी कर्णशोथ b. मध्य कर्णशोथ c. निकट दृष्टिदोष d. टिनिटस	1	CO4	K1, K2	PO1

Section B Answer any One out of Two [1 x 10 = 10 Marks]

Q. No.	QUESTIONS	Marks	COs	KL	PO
2	With the help of suitable diagrams, elaborate on the structure and functions of blood plasma and the formed elements. उपयुक्त आरेखों की सहायता से रक्त प्लाज्मा और निर्मित तत्वों की संरचना और कार्यों पर विस्तार से प्रकाश डालिए।	10	CO3, CO5	K1, K2, K3	PO1, PO10
3	Explain the structure and functions of the human eye. Add a note on two common eye disorders. मानव नेत्र की संरचना और कार्यों की व्याख्या कीजिए। दो सामान्य नेत्र विकारों पर टिप्पणी लिखिए।	10	CO4, CO5	K1, K2, K3	PO1, PO10

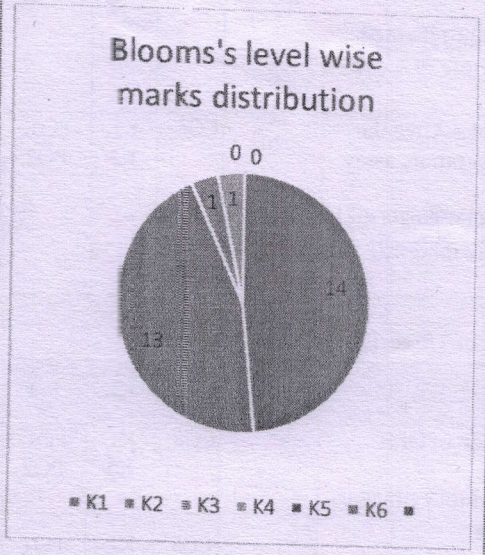
Section C Answer any Two out of Three [2 x 5 = 10 Marks]

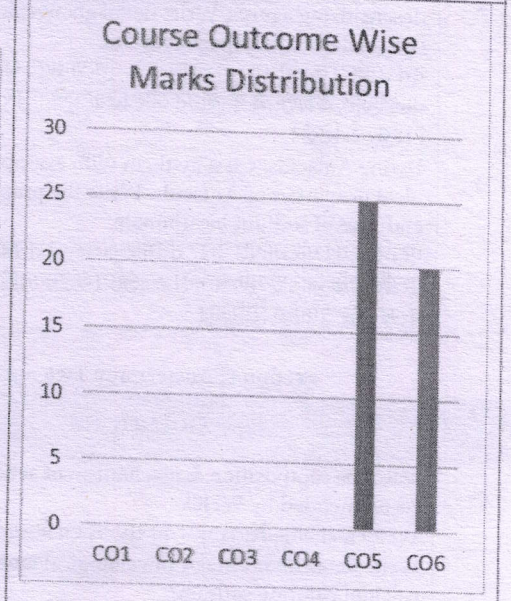
Q. No.	QUESTIONS	Marks	COs	KL	PO
4	What is erythroblastosis foetalis? Explain its cause and effects. एरिथ्रोब्लास्टोसिस फ़ोएटैलिस क्या है? इसके कारण, और प्रभाव बताएँ।	5	CO3	K1, K2	PO1
5	What is the function of lymph in the human body? मानव शरीर में लसीका का क्या कार्य है	5	CO3, CO5	K1, K2, K3	PO1
6	Explain the origin and functions of cranial nerves. कपालीय तंत्रिकाओं की उत्पत्ति एवं कार्यों की व्याख्या करें।	5	CO4, CO5	K1, K2	PO1

CO- Course Outcomes, KL- Knowledge Level, PO – Program Outcome

Course Outcomes	CO1	Know the principles of limit tests. analysis.
	CO2	Understand different classes of inorganic pharmaceuticals and their analysis
	CO3	Know about identification and test for purity of different inorganic pharmaceuticals
	CO4	Acquire knowledge about the sources of impurities and methods to determine the impurities in inorganic drugs and pharmaceuticals
	CO5	Understand the medicinal and radiopharmaceutical importance of inorganic compounds
	CO6	Introduced to a variety of inorganic drug classes.

GRAPHICAL REPRESENTATION





JGI ARKA JAIN University, Jharkhand — NAAC GRADE A ACCREDITED UNIVERSITY			2nd INTERNAL EXAMINATION School of Pharmacy
Branch	B. Pharmacy	Program	Pharmacy
Subject Name	Pharmaceutical Inorganic Chemistry (Theory)	Semester	I
		Year	November 2025
Time: 1 Hour Max. Marks : 30	• Answer all Questions of Section A (Compulsory) • Answer Any *One* out of *Two* of Section B • Answer Any *Two* out of *Three* of Section C • Possession of Mobile Phones or any kind of Written Material, Arguments with the Invigilator or Discussing with Co-Student will comes under Unfair Means and will Result in the Cancellation of the Papers.		
Knowledge Level (KL)	K1 : Remembering	K3 : Applying	K5 : Evaluating
	K2 : Understanding	K4 : Analysing	K6 : Creating

Section A (Each question Carry 01 Marks from Q1-i to Q1-x) – 10 Marks

Q. N 1	QUESTIONS	Marks	COs	KL	PO
I	Sodium chloride is used in replacement therapy primarily to correct: a) Hypokalemia b) Hyponatremia c) Hypercalcemia d) Hypomagnesemia रिप्लेसमेंट थैरेपी में सोडियम क्लोराइड का उपयोग मुख्यतः किसके सुधार के लिए होता है? a) हाइपोकैलिमिया b) हाइपोनेट्रेमिया c) हाइपरकैल्सीमियाd) हाइपोमैग्नेसीमिया	1	CO5	K1, K2	PO1
ii	Fluoride prevents dental caries mainly by: a) Increasing saliva secretion b) Forming fluoroapatite c) Acting as analgesic d) Acting as antiseptic फ्लोराइड दन्त क्षय को मुख्यतः कैसे रोकता है? a) लार स्राव में वृद्धि b) फ्लोरोएपेटाइट का निर्माण c) दर्दनाशक के रूप में कार्य करना d) एंटीसेप्टिक के रूप में कार्य	1	CO5	K1, K2	PO1

iii	Which is an ideal property of antacids?a) Produce systemic alkalosis b) React slowly c) Should not cause constipation d) Strongly acidic एंटासिड की आदर्श विशेषता कौन-सी है? a) प्रणालीगत क्षारीयता उत्पन्न करें b) धीमी प्रतिक्रिया दें c) कब्ज का कारण न बनें d) अत्यधिक अम्लीय	1	CO6	K1	PO1
iv	Magnesium hydroxide is also known as: a) Milk of magnesia b) Epsom salt c) Magnesia Chalk d) Magnesia lime मैग्नीशियम हाइड्रॉक्साइड को इन नामों से भी जाना जाता है: a) मिल्क ऑफ मैग्नीशिया b) एप्सम सॉल्ट c) मैग्नीशिया चाक d) मैग्नीशिया लाइम	1	CO6	K1, K2	PO1
v	ORS contains which of the following? a) Zinc + NaCl b) Glucose + electrolytes c) Only glucose d) Only NaCl ओआरएस में निम्नलिखित में से क्या होता है? a) जिंक + NaCl b) ग्लूकोज + इलेक्ट्रोलाइट्स c) केवल ग्लूकोज d) केवल NaCl	1	CO6	K1, K2	PO1
vi	Zinc oxide eugenol cement is mainly used as: a) Restorative filling b) Local anesthetic c) Antiseptic d) Tooth whitening जिंक ऑक्साइड यूजेनॉल सीमेंट का उपयोग मुख्यतः निम्नलिखित के रूप में किया जाता है: a) पुनर्स्थापनात्मक भराव b) स्थानीय संवेदनाहारी c) एंटीसेप्टिक d) दांतों को सफेद करने के लिए	1	CO5	K1, K2	PO1, PO2
vii	Which antacid is systemic? a) Sodium bicarbonate b) Aluminum hydroxide c) Magnesium hydroxide d) Calcium carbonate कौन सा एंटासिड प्रणालीगत है? a) सोडियम बाइकार्बोनेट b) एल्युमिनियम हाइड्रॉक्साइड c) मैग्नीशियम हाइड्रॉक्साइड d) कैल्शियम कार्बोनेट	1	CO6	K1, K2	PO1, PO2
viii	Ammonium chloride acts as: a) Systemic alkalizer b) Systemic acidifier c) Antacid d) Buffering agent अमोनियम क्लोराइड किस रूप में कार्य करता है: a) प्रणालीगत क्षारक b) प्रणालीगत अम्लकारक c) प्रतिअम्ल d) बफरिंग एजेंट	1	CO6	K1, K2	PO1, PO2
ix	Which electrolyte is the major cation in ECF? a) K^+ b) Na^+ c) Ca^{2+} d) Mg^{2+} ECF में कौन सा विद्युत अपघट्य प्रमुख धनायन है? a) K^+ b) Na^+ c) Ca^{2+} d) Mg^{2+}	1	CO5	K1, K2	PO1
x	Dentifrices commonly contain which of the following as an abrasive agent? a) Sodium chloride b) Calcium carbonate c) Zinc eugenol d) Glycerin डेंटिफ्रिस में आमतौर पर अपघर्षक के रूप में निम्नलिखित में से कौन सा पदार्थ होता है? a) सोडियम क्लोराइड b) कैल्शियम कार्बोनेट c) ज़िंक यूजेनॉलd) ग्लिसरीन	1	CO5	K1, K2	PO1, PO2

Section B Answer any One out of Two [1 x 10 = 10 Marks]

Q. No.	QUESTIONS	Marks	Cos	KL	PO
2	Describe dental products in detail: dentifrices, desensitizing agents, Write detail about calcium carbonate & zinc eugenol cement. दंत उत्पादों का विस्तार से वर्णन करें: दंत-शोधक, संवेदनहीन करने वाले एजेंट, कैल्शियम कार्बोनेट और जिंक यूजेनॉल सीमेंट के बारे में विस्तार से लिखें।	10	CO5	K2, K4	PO1, PO10
3	Define Antacids. Classify them with examples. Give the ideal properties of Antacids. Write the preparation, assay and uses of sodium bicarbonate. एंटासिड को परिभाषित करें? उदाहरणों सहित उनका वर्गीकरण करें। एंटासिड के आदर्श गुण बताएँ। सोडियम बाइकार्बोनेट की तैयारी, परख और उपयोग लिखिए।	10	CO6	K1, K2	PO1, PO2

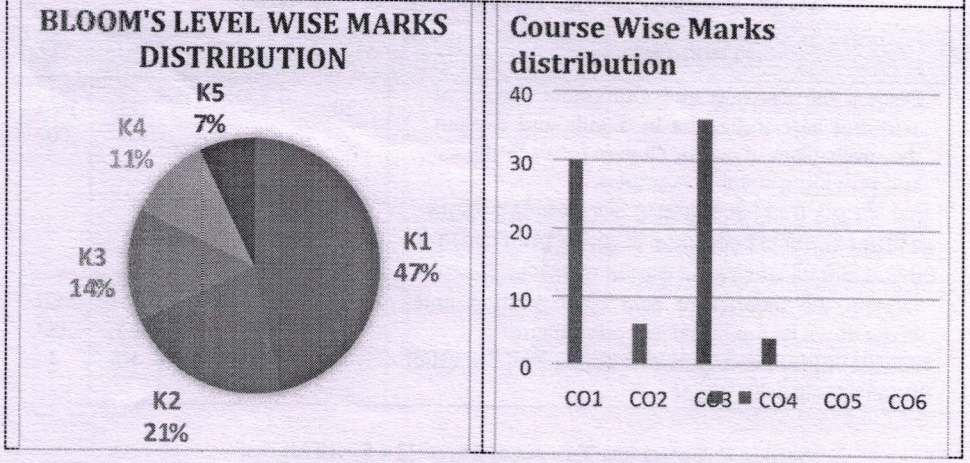
Section C Answer any Two out of Three [2 x 5 = 10 Marks]

Q. No.	QUESTIONS	Marks	Cos	KL	PO
4	Describe composition & mechanism of action of ORS recommended by WHO. WHO द्वारा अनुशंसित ORS का संघटन एवं क्रिया-विधान समझाइए।	5	CO6	K1, K2	PO1, PO2
5	Write detail about major physiological ions calcium,chloride,sodium? प्रमुख शारीरिक आयनों कैल्शियम, क्लोराइड, सोडियम के बारे में विस्तार से लिखें?	5	CO5	K1, K3	PO1
6	Describe details about the calcium gluconate. कैल्शियम ग्लूकोनेट के बारे में विवरण बताएं।	5	CO5	K1, K2	PO1, PO2

CO- Course Outcomes, KL- Knowledge Level, PO – Program Outcome

Course Outcomes	CO1	Understand the ideas with the fundamental of analytical chemistry.
	CO2	Remember the sources of mistakes and errors in analysis and their minimizing techniques.
	CO3	Apply the fundamentals of volumetric analytical skills.
	CO4	Understand the fundamentals and mechanism of precipitation, and complexometric titration.
	CO5	Understand the fundamentals and types of redox titration.
	CO6	Understand the basic knowledge in the principles of electrochemical analytical techniques.

GRAPHICAL REPRESENTATION



JGi ARKA JAIN University Jharkhand — NAAC GRADE A ACCREDITED UNIVERSITY			2nd INTERNAL EXAMINATION School of Pharmacy
Branch	B. Pharmacy	Program	Pharmacy
Subject Name	Pharmaceutical analysis I (Theory)	Semester	I
		Year	November 2025
Time: 1 Hour Max. Marks : 30	• Answer all Questions of Section A (Compulsory) • Answer Any *One* out of *Two* of Section B • Answer Any *Two* out of *Three* of Section C • Possession of Mobile Phones or any kind of Written Material, Arguments with the Invigilator or Discussing with Co-Student will comes under Unfair Means and will Result in the Cancellation of the Papers.		
Knowledge Level (KL)	K1 : Remembering	K3 : Applying	K5 : Evaluating
	K2 : Understanding	K4 : Analysing	K6 : Creating

Section A (Each question Carry 01 Marks from Q1-i to Q1-x) – 10 Marks

Q. N 1	QUESTIONS	Marks	COs	KL	PO
i	How many significant figures are in a number 0.004560? a)3 c)5 b)4 d)6 संख्या 0.004560 में कितने सार्थक अंक हैं? a)3 c)5 b)4 d)6	1	CO2	K1, K2	PO1
ii	What is the purpose of an indicator in an acid base titration? a) Neutralize the acid and base b) Catalyse the reaction c)Change colour at equivalent point d) Increase the PH of the solution. अम्ल-क्षार अनुमापन में सूचक का उद्देश्य क्या है? a) अम्ल और क्षार को उदासीन करना b) अभिक्रिया को उत्प्रेरित करना c) तुल्यांक बिंदु पर रंग बदलना d) विलयन का PH बढ़ाना।	1	CO3	K1, K2	PO2
iii	When titration occur between weak acid and strong base which indicator are used? a) Methyl blue c) A&B b) Phenopthalein d) None of these. जब दुर्बल अम्ल और प्रबल क्षार के बीच अनुमापन होता है तो कौन सा सूचक प्रयोग किया जाता है? a) मिथाइल ब्लू c) A और B b) फिनोप्थेलिन d) इनमें से कोई नहीं।	1	CO3,CO4	K3	PO1

iv	Which of the following titration will have the equivalence point at a PH more than 8? a)HCL& NH3 c) CH3COOH b)HCL &NaOH d) CH3COOH&NAOH निम्नलिखित में से किस अनुमापन का तुल्यता बिंदु 8 से अधिक PH पर होगा? a) HCL और NH3 c) CH3COOH b) HCL और NaOH d) CH3COOH और NaOH	1	CO3	K1, K4	PO2
v	Which theory failed to explain the acid base reaction that do not involve in the formation of coordinate bond/covalent bond? a) Arrhenius theory c) lewis theory b) Bronsted lowry theory d) Quinonoid theory कौन सा सिद्धांत उस अम्ल-क्षार अभिक्रिया की व्याख्या करने में विफल रहा जिसमें उपसहसंयोजक बंध/सहसंयोजक बंध का निर्माण शामिल नहीं होता? a) अरहेनियस सिद्धांत c) लुईस सिद्धांत b) ब्रोंस्टेड लोरी सिद्धांत d) क्विनोनॉइड सिद्धांत	1	CO4	K1, K2	PO2
vi	Which of the following describes the ph at the equivalence point when titrating a weak acid with a strong base? a)ph=7 c)ph<7 b)ph>7 d)ph=pka of weak acid इनमें से कौन सा तरीका एक कमज़ोर एसिड कोएक मज़बूत बेस के साथ टाइट्रेट करते समय इक्विवेलेंस पॉइंट पर pH को बताता है? a)PH=7 c)PH<7 b)PH>7 d)PH =pka of weak acid	1	CO3	K1, K3	PO1 , PO2
vii	Which primary standard is commonly used for the standardization of a strong base like NaOH? a) Potassium dichromate c) Potassium hydrogen phthalate b) Lead acetate d) Sodium thiosulphate NaOH जैसे प्रबल क्षार के मानकीकरण के लिए सामान्यतः किस प्राथमिक मानक का उपयोग किया जाता है? a) पोटेशियम डाइक्रोमेट c) पोटेशियम हाइड्रोजन फथैलेट b) लेड एसीटेट d) सोडियम थायोसल्फेट	1	CO3	K1, k3	PO1 ,PO 2
viii	According to bronsted lowry theory of an acid is a substance that has among the following. a) accepts a proton H+ c) donates a proton H+ b) accepts a electron pair d) donates an electron pair ब्रोंस्टेड लोरी के सिद्धांत के अनुसार, अम्ल वह पदार्थ है जिसमें निम्नलिखित में से कोई एक होता है। a) एक प्रोटॉन H+ ग्रहण करता है c) एक प्रोटॉन H+ दान करता b) एक इलेक्ट्रॉन युग्म ग्रहण करता है d) एक इलेक्ट्रॉन युग्म दान	1	CO4	K1, K2	PO1 , PO2
ix	8.5ml HCL in 1 Litre=_____ a) 0.1N c)0.1M b) Both A&B d)0.5M 1 लीटर में 8.5 कमली हाइडरोक्लोराइड=_____ a) 0.1N c)0.1M b) A और B दोनों d)0.5M	1	CO3	K1, K3	PO2
x	Which of the following is the strongest Bronsted-Lowry base? a) NH3 c) HO3S - b) CO32- d) H2BO3 निम्नलिखित में से कौन सा सबसे मजबूत ब्रोंस्टेड-लोरी आधार है? a) NH3 c) HSO3 b) Co32+ d) H_2BO_3	1	CO4	K1, K4	PO1 , PO2

Section B Answer any One out of Two [1 x 10 = 10 Marks]

Q. No.	QUESTIONS	Marks	COs	KL	PO
2	Discuss the Ostwald and Quinonoid theory of acid and base indicators in details and explain the mechanism of colour change for each theory and providing suitable examples. अम्ल और क्षार सूचकों के ओस्टवाल्ड और क्विनोनोइड सिद्धांत पर विस्तार से चर्चा करें और प्रत्येक सिद्धांत के लिए रंग परिवर्तन की क्रियाविधि को समझाएं तथा उपयुक्त उदाहरण प्रदान करें।	10	CO1,CO3	K2, K5	PO1 ,P02
3	Explain the theories of acid base titration and Write down its limitation and advantages. अम्ल-क्षार अनुमापन के सिद्धांतों की व्याख्या कीजिए तथा इसकी सीमाओं और लाभों को लिखिए।	10	CO1,CO3	K1, K5	PO1 ,PO 2

Section C Answer any Two out of Three [2 x 5 = 10 Marks]

Q. No.	QUESTIONS	Marks	COs	KL	PO
4	Classify acid and base titration with neutralization curve? उदासीनीकरण वक्र के साथ अम्ल और क्षार अनुमापन को वर्गीकृत करें?	5	CO1, CO3	K1, K4	PO1 ,PO 2
5	Write a short note on Assay of Ammonium chloride? अमोनियम क्लोराइड के परख पर एक संक्षिप्त टिप्पणी लिखें?	5	CO1, CO3	K1, K2	PO1
6	Write the different rules for significant figures with examples. सार्थक अंकों के लिए विभिन्न नियमों को उदाहरण सहित लिखिए।	5	CO2	K1	PO1

	ARKA JAIN University, Jharkhand (NAAC GRADE A)		2nd INTERNAL EXAMINATION
Program Name	**BACHELOR OF PHARMACY**	Program Code	**B.PHARM**
Course Name	**COMMUNICATION SKILLS**	Semester	**I**
Course Code	**PHM21005**	Year	**2025/ODD**
Time: 1 Hours	**Answer Any ONE of Section AAnswer Any FOUR of Section B**	Maximum Marks	**30**

Knowledge Level (KL)			
	K1 : Remembering	**K3 :** Applying	**K5 :** Evaluating
	K2 : Understanding	**K4 :** Analysing	**K6 :** Creating

Section A

Answer any one out of two[1 x 10 = 10 Marks]

Q. No.	Questions	Marks	COs	KL	PO
1(i)	How is Communication Skill necessary for health care professionals?	10	1	2	1
1(ii)	Describe the barriers to communication.	10	5	2	2

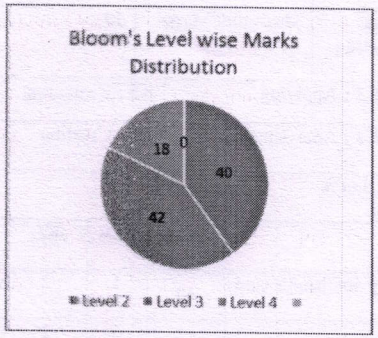
Section B

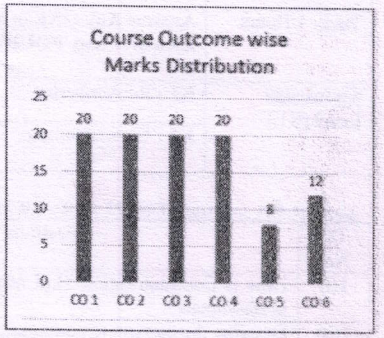
Answer any FOUR out of SIX **[4 x 5 = 20 Marks]**

Q. No.	Questions	Marks	COs	KL	PO
1	Write about the principles of communication.	05	2	2	3
2	Explain the steps of communication.	05	1	4	2
3	What is non-verbal communication? Describe.	05	2	5	1
4	What is the difference between verbal and non-verbal Communication?	05	5	2	1
5	Write the advantages of proficiency in multiple languages.	05	1	2	2
6	Write a note on English as a global language.	05	2	1	3

CO- Course Outcomes, KL- Knowledge Level, PO – Program Outcome

Course Outcomes	CO1	To understand the behavioural needs for a Pharmacist to function effectively in the areas of pharmaceutical operation
	CO2	Communicate effectively (Verbal and Non Verbal)
	CO3	Effectively manage the team as a team player
	CO4	To develop interview skills
	CO5	To develop Leadership qualities and essentials





	ARKA JAIN University, Jharkhand — NAAC GRADE A		2nd INTERNAL EXAMINATION
Program Name	**BACHELOR OF PHARMACY**	Program Code	**B.PHARM**
Course Name	**COMMUNICATION SKILLS**	Semester	**I**
Course Code	**PHM21005**	Year	**2025/ODD**
Time: 1 Hours	**Answer Any ONE of Section AAnswer Any FOUR of Section B**	Maximum Marks	**30**
Knowledge Level (KL)	**K1 :** Remembering	**K3 :** Applying	**K5 :** Evaluating
	K2 : Understanding	**K4 :** Analysing	**K6 :** Creating

Section A

Answer any one out of two[1 x 10 = 10 Marks]

Q. No.	Questions	Marks	COs	KL	PO
1(i)	How is Communication Skill necessary for health care professionals?	10	1	2	1
1(ii)	Describe the barriers to communication.	10	5	2	2

Section B

Answer any FOUR out of SIX **[4 x 5 = 20 Marks]**

Q. No.	Questions	Marks	COs	KL	PO
1	Write about the principles of communication.	05	2	2	3
2	Explain the steps of communication.	05	1	4	2
3	What is non-verbal communication? Describe.	05	2	5	1
4	What is the difference between verbal and non-verbal Communication?	05	5	2	1
5	Write the advantages of proficiency in multiple languages.	05	1	2	2
6	Write a note on English as a global language.	05	2	1	3

CO- Course Outcomes, KL- Knowledge Level, PO – Program Outcome

Course Outcomes	CO1	To understand the behavioural needs for a Pharmacist to function effectively in the areas of pharmaceutical operation
	CO2	Communicate effectively (Verbal and Non Verbal)
	CO3	Effectively manage the team as a team player
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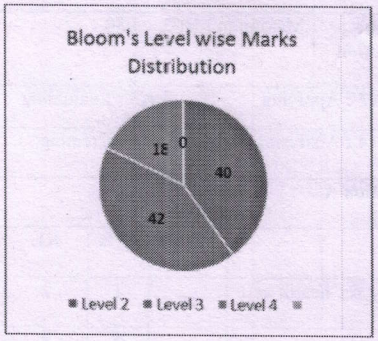
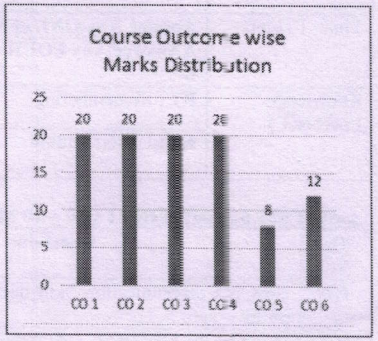
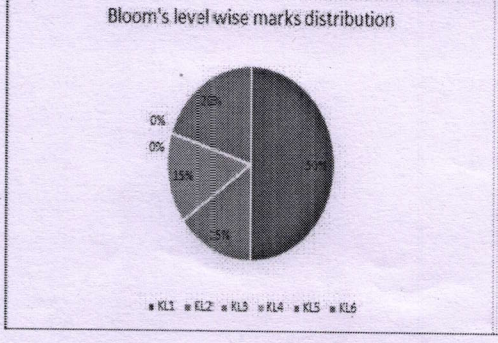


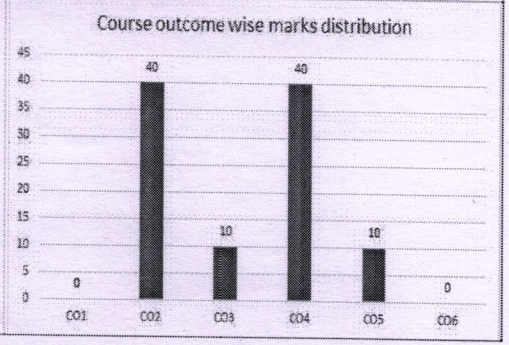


CO- Course Outcomes, **KL**- Knowledge Level, **PO** – Program Outcome

Course Outcomes	CO1	Understand classification system of the living world.
	CO2	Know the morphology and anatomy of plants and animals
	CO3	Understand the organ system in plant and their physiology
	CO4	Know the organ system in animals and their physiology
	CO5	Know about the nutrition and growth regulators of plant
	CO6	Understand cell biology (Basic Nature of Plant cell and Animal cell)

GRAPHICAL REPRESENTATION





ARKA JAIN University
Jharkhand
NAAC GRADE A ACCREDITED UNIVERSITY

2nd INTERNAL EXAMINATION
School of Pharmacy

Branch	**B. Pharmacy**	**Program**	**Pharmacy**
Subject Name	**Remedial Biology**	**Semester**	**I**
		Year	**October 2025**

Time: 1 Hour
Max. Marks : 30

- **Answer Any *One* out of *Two* of Section A**
- **Answer Any *Two* out of *Three* of Section B**
- **Possession of Mobile Phones or any kind of Written Material, Arguments with the Invigilator or Discussing with Co-Student will comes under Unfair Means and will Result in the Cancellation of the Papers.**

Knowledge Level (KL)	**K1 :** Remembering	**K3 :** Applying	**K5 :** Evaluating
	K2 : Understanding	**K4 :** Analysing	**K6 :** Creating

Section A Answer any One out of Two [1 x 10 = 10 Marks]

Q. No.	QUESTIONS	Marks	COs	KL	PO
1	Describe the structure of the human alimentary canal with a labelled diagram. Explain the functions of each part in detail. मानव आहार नाल की संरचना को एक लेबलयुक्त चित्र सहित वर्णन कीजिए। आहार नाल के प्रत्येक भाग के कार्यों की विस्तार से व्याख्या कीजिए।	10	CO2	K1, K6	PO1, PO10
2	Describe the human respiratory system with a labelled diagram. Explain the structure and functions of each part. मानव श्वसन तंत्र का वर्णन कीजिए। एक लेबलयुक्त चित्र सहित उसके प्रत्येक भाग की संरचना एवं कार्यों को समझाइए।	10	CO2	K1, K6	PO1, PO10

Section B Answer any Four out of Six [4 x 5 = 20 Marks]

Q. No.	QUESTIONS	Marks	COs	KL	PO
3	Describe the internal structure of the human heart. मानव हृदय की आंतरिक संरचना का वर्णन कीजिए।	5	CO4	K1, K3	PO1
4	Write short note on digestive enzymes. पाचक एन्ज़ाइम्स पर संक्षिप्त टिप्पणी लिखिए।	5	CO4	K1, K2	PO1, PO7
5	Write in detail about the different types of blood vessels. रक्त वाहिकाओं के विभिन्न प्रकार का विस्तृत वर्णन कीजिए।	5	CO4	K1, K3	PO1, PO7
6	Write a short note on cardiac cycle. हृदय चक्र पर संक्षिप्त टिप्पणी लिखिए।	5	CO4	K1, K2	PO1, PO7
7	Write short note on essential minerals, macro and micronutrients. पौधों के लिए आवश्यक खनिज, मैक्रोन्यूट्रिएंट्स और माइक्रोन्यूट्रिएंट्स पर संक्षिप्त टिप्पणी लिखिए।"	5	CO5	K1, K3	PO1, PO7
8	Define photosynthesis. What are the factors affecting photosynthesis? प्रकाश-संश्लेषण की परिभाषा लिखिए। प्रकाश-संश्लेषण को प्रभावित करने वाले कारकों का वर्णन कीजिए।	5	CO3	K1, K2	PO1, PO7

	ARKA JAIN University, Jharkhand — NAAC GRADE A		2nd INTERNAL EXAMINATION
Program Name	BACHELOR OF PHARMACY	Program Code	B.PHARM
Course Name	Remedial Mathematics	Semester	I
Course Code	PHM21006	Year	2025/ODD
Time: 1 Hours	Answer Any ONE of Section A Answer Any FOUR of Section B	Maximum Marks	30
Knowledge Level (KL)	K1 : Remembering	K3 : Applying	K5 : Evaluating
	K2 : Understanding	K4 : Analysing	K6 : Creating

Section A

Answer any one out of two **[1 x 10 = 10 Marks]**

Q. No.	Questions	Marks	COs	KL	PO
1(i)	If A = $\begin{bmatrix} 1 & 2 & 2 \\ 2 & 2 & 3 \\ 3 & 2 & 2 \end{bmatrix}$ find $A^2 + 3I$.	10	CO2	K3,K4	PO1
1(ii)	*find value of* $\int \frac{dx}{49-x2}$ (x < 7)	10	CO6	K4,K5	PO2

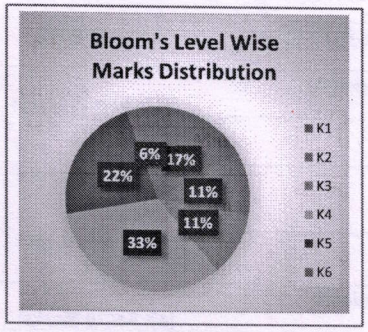
Section B

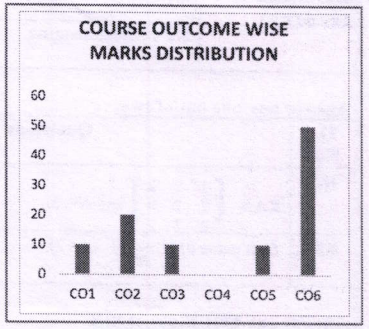
Answer any FOUR out of SIX **[4 x 5 = 20 Marks]**

Q. No.	Questions	Marks	COs	KL	PO
1	$\int(2x^5-3x^2+2)dx$ find value.	05	CO6	K1,K2	PO1
2	Prove that $\begin{pmatrix} 1 & a & b+c \\ 1 & b & c+a \\ 1 & c & a+b \end{pmatrix}$ = (a-b)(b-c)(c-a)	05	CO5	K6	PO10
3	Differentiate with respect to x; $ax+b+cx^{-1}$	05	CO6	K4,K5	PO2
4	Evaluate the following integral. $\int \frac{x2}{x2-1} dx$	05	CO6	K1,K6	PO10
5	Solve the equation by using cramer's rule; 2x+3y = 7; 3x+5y = 9	05	CO3	K1,K2	PO10
6	Find $\lim_{n \to 1} f(x)$, where $F(x) = \frac{x2-1}{x-1}$, $x \neq 1$	05	CO1	K4,K5	PO2

CO- Course Outcomes, KL- Knowledge Level, PO – Program Outcome

Course Outcomes	CO1	Evaluate and demonstrate the partial fraction, logarithms, functions and limits and continuity.
	CO2	Explain matrices and determination.
	CO3	Explain simple equations using graphs.
	CO4	Evaluate relationship and functions; fundamentals of trigonometry and geometry.
	CO5	Analyze sequences and binomial series.
	CO6	Evaluate calculus and integral calculus.





Note : This above figure is only Example and must prepare this type of figure in these two column

	ARKA JAIN University, Jharkhand — NAAC GRADE A		2nd INTERNAL EXAMINATION
Program Name	BACHELOR OF PHARMACY	Program Code	B.PHARM
Course Name	Remedial Mathematics	Semester	I
Course Code	PHM21006	Year	2025/ODD
Time: 1 Hours	Answer Any ONE of Section A Answer Any FOUR of Section B	Maximum Marks	30

Knowledge Level (KL)			
	K1 : Remembering	K3 : Applying	K5 : Evaluating
	K2 : Understanding	K4 : Analysing	K6 : Creating

Section A

Answer any one out of two **[1 x 10 = 10 Marks]**

Q. No.	Questions	Marks	COs	KL	PO
1(i)	If $A = \begin{bmatrix} 1 & 2 & 2 \\ 2 & 2 & 3 \\ 3 & 2 & 2 \end{bmatrix}$ find $A^2 + 3I$.	10	CO2	K3,K4	PO1
1(ii)	*find value of* $\int \frac{dx}{49-x2}$ (x < 7)	10	CO6	K4,K5	PO2

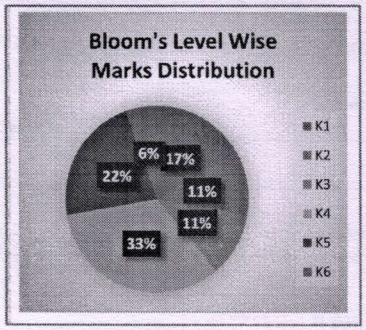
Section B

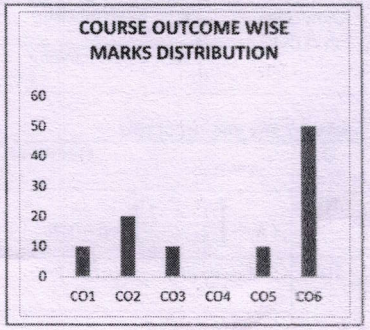
Answer any FOUR out of SIX **[4 x 5 = 20 Marks]**

Q. No.	Questions	Marks	COs	KL	PO
1	$\int(2x^5-3x^2+2)dx$ find value.	05	CO6	K1,K2	PO1
2	Prove that $\begin{pmatrix} 1 & a & b+c \\ 1 & b & c+a \\ 1 & c & a+b \end{pmatrix}$ = (a-b)(b-c)(c-a)	05	CO5	K6	PO10
3	Differentiate with respect to x; $ax+b+cx^{-1}$	05	CO6	K4,K5	PO2
4	Evaluate the following integral. $\int \frac{x2}{x2-1} dx$	05	CO6	K1,K6	PO10
5	Solve the equation by using cramer's rule; 2x+3y = 7; 3x+5y = 9	05	CO3	K1,K2	PO10
6	Find $\lim_{n \to 1} f(x)$, where $F(x) = \frac{x2-1}{x-1}$, $x \neq 1$	05	CO1	K4,K5	PO2

CO- Course Outcomes, KL- Knowledge Level, PO – Program Outcome

Course Outcomes	CO1	Evaluate and demonstrate the partial fraction, logarithms, functions and limits and continuity.
	CO2	Explain matrices and determination.
	CO3	Explain simple equations using graphs.
	CO4	Evaluate relationship and functions; fundamentals of trigonometry and geometry.
	CO5	Analyze sequences and binomial series.
	CO6	Evaluate calculus and integral calculus.





Note : This above figure is only Example and must prepare this type of figure in these two column

SCHOOL OF PHARMACY	ARKA JAIN University Jharkhand NAAC GRADE A		2nd INTERNAL EXAMINATION
Program Name	**BACHELOR OF PHARMACY**	Program Code	**B. PHARM**
Course Name	**Human Anatomy and Physiology I (Practical)**	Semester	**1st Semester (Group-A)**
Course Code	**PHM21007**	Year	**November 2025**
Time: 4 Hours	**All the Questions are Compulsory**	Maximum Marks	**40**
		Time	**4 hrs.**
Knowledge Level (KL)	**K1 :** Remembering	**K3 :** Applying	**K5 :** Evaluating
	K2 : Understanding	**K4 :** Analysing	**K6 :** Creating

Section A

[1 x 10 = 10 Marks]

Q. No.	Questions	Marks	COs	KL	PO
I	Outline the mechanism of blood coagulation. रक्त जमावट की क्रियाविधि को रेखांकित करें।	10	CO2, CO5	K1, K2	PO1

Section B

[15 + 10=25 Marks]

Q. No.	Questions	Marks	COs	KL	PO
II	a. Perform the Enumeration of white blood cell (WBC) count. श्वेत रक्त कोशिका (WBC) की गणना करें।	15	CO2	K1, K2, K3, K4, K5	PO1
	b. Perform the determination of clotting time. थक्के जमने के समय का निर्धारण करें।	10	CO2	K1, K2, K3, K4	PO1

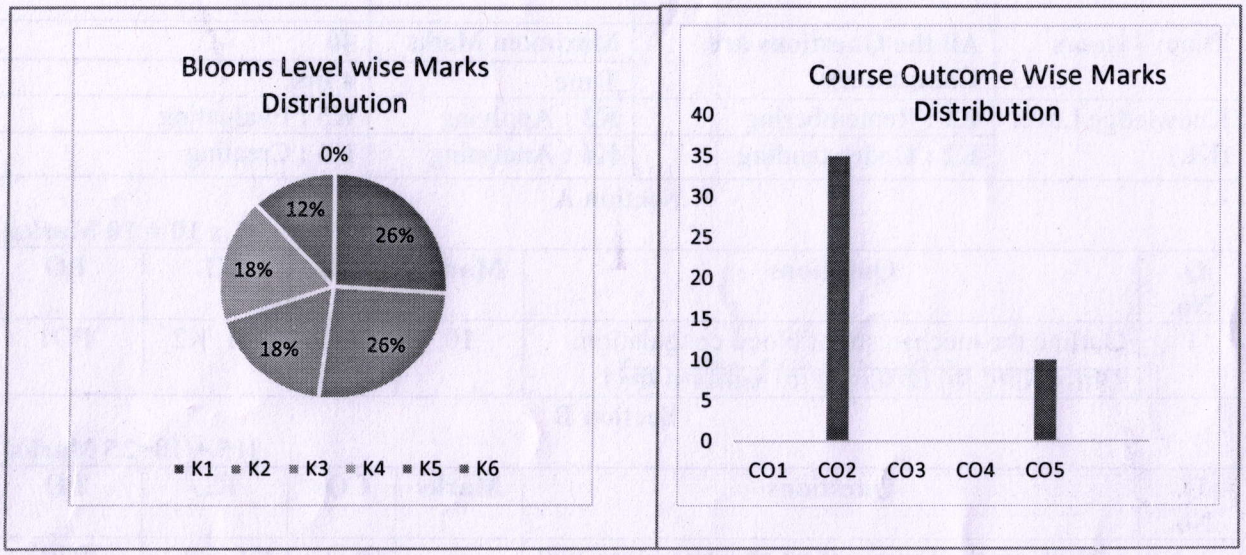
Section C

[05 Marks]

Q. No.	Questions	Marks	COs	KL	PO
III	Viva voce	05			

CO- Course Outcomes, KL- Knowledge Level, PO – Program Outcome

Course Outcomes	CO1	Understand human body histology & microscopic process
	CO2	Understanding both physiological/anatomical homeostatic mechanisms
	CO3	Learn about human skeleton
	CO4	Learn about vital sign measurements
	CO5	Develop a vocabulary of appropriate terminology to effectively communicate information related to human anatomy and physiology.



SCHOOL OF PHARMACY	ARKA JAIN University Jharkhand NAAC GRADE A		2nd INTERNAL EXAMINATION
Program Name	**BACHELOR OF PHARMACY**	Program Code	**B. PHARM**
Course Name	**Human Anatomy and Physiology I (Practical)**	Semester	**1st Semester (Group-B)**
Course Code	**PHM21007**	Year	**November 2025**
Time: 4 Hours	**All the Questions are Compulsory**	Maximum Marks	**40**
		Time	**4 hrs.**
Knowledge Level (KL)	**K1 :** Remembering	**K3 :** Applying	**K5 :** Evaluating
	K2 : Understanding	**K4 :** Analysing	**K6 :** Creating

Section A

[1 x 10 = 10 Marks]

Q. No.	Questions	Marks	COs	KL	PO
I	Write the composition of blood plasma. रक्त प्लाज़्मा की संरचना लिखिए।	10	CO2, CO5	K1, K2	PO1

Section B

[15 + 10=25 Marks]

Q. No.	Questions	Marks	COs	KL	PO
II	a. Perform the estimation of haemoglobin content. हीमोग्लोबिन सामग्री का आकलन करें।	15	CO2	K1, K2, K3, K4, K5	PO1
	b. Perform the determination of bleeding time. रक्तस्राव समय का निर्धारण करें।	10	CO2	K1, K2 K3, K4	PO1

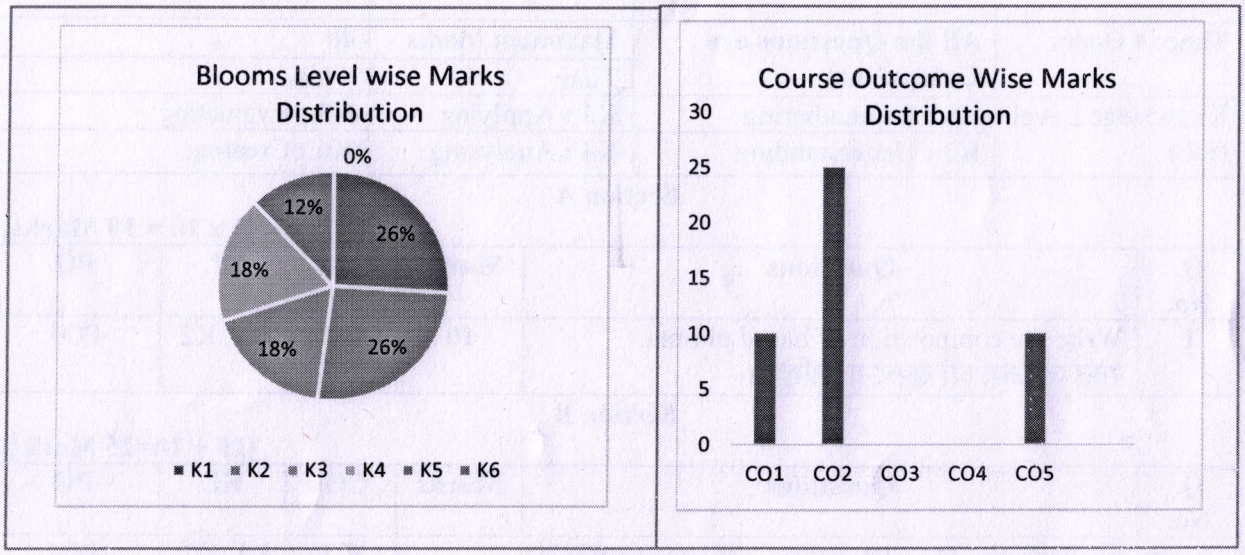
Section C

[05 Marks]

Q. No.	Questions	Marks	COs	KL	PO
III	Viva voce	05			

CO- Course Outcomes, KL- Knowledge Level, PO – Program Outcome

Course Outcomes	CO1	Understand human body histology & microscopic process
	CO2	Understanding both physiological/anatomical homeostatic mechanisms
	CO3	Learn about human skeleton
	CO4	Learn about vital sign measurements
	CO5	Develop a vocabulary of appropriate terminology to effectively communicate information related to human anatomy and physiology.



SCHOOL OF PHARMACY	ARKA JAIN University Jharkhand NAAC GRADE A		2nd INTERNAL EXAMINATION
Program Name	**BACHELOR OF PHARMACY**	Program Code	**B. PHARM**
Course Name	**Human Anatomy and Physiology I (Practical)**	Semester	**1st Semester (Group-C)**
Course Code	**PHM21007**	Year	**November 2025**
Time: 4 Hours	**All the Questions are Compulsory**	Maximum Marks	**40**
		Time	**4 hrs.**
Knowledge Level (KL)	**K1 :** Remembering	**K3 :** Applying	**K5 :** Evaluating
	K2 : Understanding	**K4 :** Analysing	**K6 :** Creating

Section A

[1 x 10 = 10 Marks]

Q. No.	Questions	Marks	COs	KL	PO
I	Write short notes on anaemia and its types. एनीमिया और उसके प्रकारों पर संक्षिप्त नोट्स लिखें।	10	CO2, CO5	K1, K2	PO1

Section B

[15 + 10=25 Marks]

Q. No.	Questions	Marks	COs	KL	PO
II	a. Perform an experiment on determination of blood group. रक्त समूह के निर्धारण पर एक प्रयोग करें।	15	CO2	K1, K2, K3, K4, K5	PO1
	b. Perform the determination of clotting time. थक्के जमने के समय का निर्धारण करें।	10	CO2	K1, K2 K3, K4	PO1

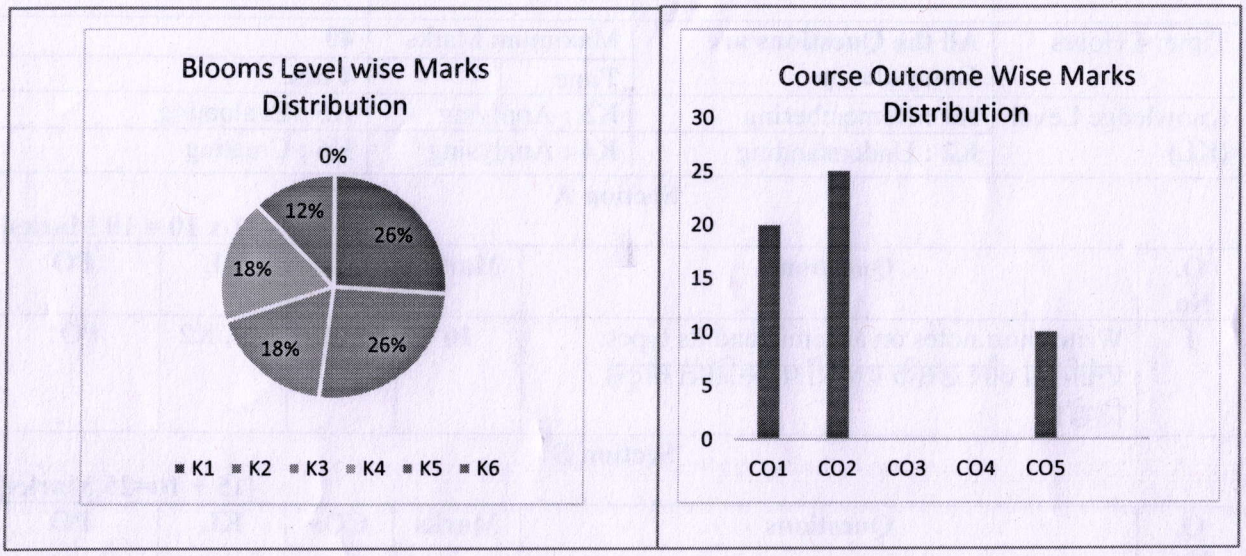
Section C

[05 Marks]

Q. No.	Questions	Marks	COs	KL	PO
III	Viva voce	05			

CO- Course Outcomes, KL- Knowledge Level, PO – Program Outcome

Course Outcomes	CO1	Understand human body histology & microscopic process
	CO2	Understanding both physiological/anatomical homeostatic mechanisms
	CO3	Learn about human skeleton
	CO4	Learn about vital sign measurements
	CO5	Develop a vocabulary of appropriate terminology to effectively communicate information related to human anatomy and physiology.



SCHOOL OF PHARMACY	ARKA JAIN University Jharkhand NAAC GRADE A		2nd INTERNAL EXAMINATION
Program Name	**BACHELOR OF PHARMACY**	Program Code	**B. PHARM**
Course Name	**Human Anatomy and Physiology I (Practical)**	Semester	**1st Semester (Group-D)**
Course Code	**PHM21007**	Year	**November 2025**
Time: 4 Hours	**All the Questions are Compulsory**	Maximum Marks	**40**
		Time	**4 hrs.**
Knowledge Level (KL)	**K1 :** Remembering	**K3 :** Applying	**K5 :** Evaluating
	K2 : Understanding	**K4 :** Analysing	**K6 :** Creating

Section A

[1 x 10 = 10 Marks]

Q. No.	Questions	Marks	COs	KL	PO
I	Write short notes on anaemia and its types. एनीमिया और उसके प्रकारों पर संक्षिप्त नोट्स लिखें।	10	CO2, CO5	K1, K2	PO1

Section B

[15 + 10=25 Marks]

Q. No.	Questions	Marks	COs	KL	PO
II	a. Perform an experiment on determination of blood group. रक्त समूह के निर्धारण पर एक प्रयोग करें।	15	CO2, CO4	K1, K2, K3, K4, K5	PO1
	b. Perform the determination of bleeding time. रक्तस्राव समय का निर्धारण करें।	10	CO2	K1, K2 K3, K4	PO1

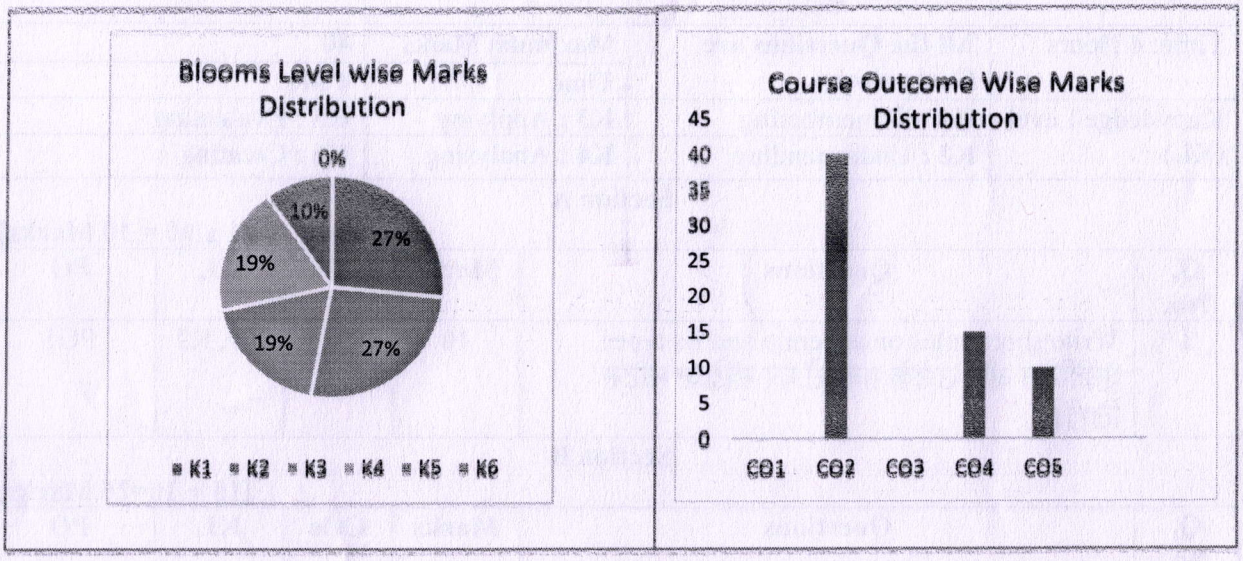
Section C

[05 Marks]

Q. No.	Questions	Marks	COs	KL	PO
III	Viva voce	05			

CO- Course Outcomes, KL- Knowledge Level, PO – Program Outcome

Course Outcomes	CO1	Understand human body histology & microscopic process
	CO2	Understanding both physiological/anatomical homeostatic mechanisms
	CO3	Learn about human skeleton
	CO4	Learn about vital sign measurements
	CO5	Develop a vocabulary of appropriate terminology to effectively communicate information related to human anatomy and physiology.



SCHOOL OF PHARMACY	ARKA JAIN University Jharkhand | NAAC GRADE A		2nd INTERNAL EXAMINATION
Program Name	**BACHELOR OF PHARMACY**	Program Code	**B. PHARM**
Course Name	**Ph. Inorganic Chemistry (Practical)**	Semester	**1st Semester (Group-A)**
Course Code	**PHM21010**	Year	**November 2025**
Time: 4 Hours	**All the Questions are Compulsory**	Maximum Marks	**40**
		Time	**4 hrs.**
Knowledge Level (KL)	**K1 :** Remembering	**K3 :** Applying	**K5 :** Evaluating
	K2 : Understanding	**K4 :** Analysing	**K6 :** Creating

Section A

[1 x 10 = 10 Marks]

Q. No.	Questions	Marks	COs	KL	PO
I	**Synopsis** Synopsis on major Physiological ions? प्रमुख शारीरिक आयनों पर सारांश?	10	CO2	K2	PO1,PO2,PO7

Section B

[15 + 10=25 Marks]

Q. No.	Questions	Marks	COs	KL	PO
II	a.Major Write an experiment on limit Test for iron. लोहे के लिए सीमा परीक्षण पर एक प्रयोग लिखें।	15	CO5	K3	PO1,PO4, PO7
	b.Minor Write the Identification Test for Magnesium Hydroxide. मैग्नीशियम हाइड्रॉक्साइड के लिए पहचान परीक्षण लिखें।	10	CO1	K3	PO1,PO3, PO10

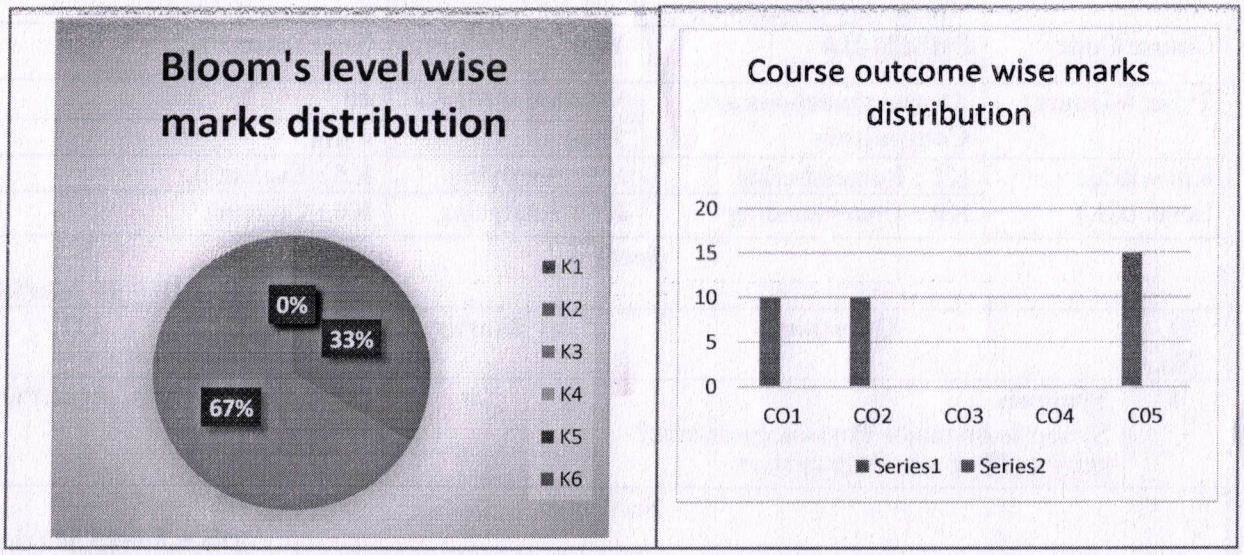
Section C

[05 Marks]

Q. No.	Questions	Marks	COs	KL	PO
III	Viva voce	05			

CO- Course Outcomes, KL- Knowledge Level, PO – Program Outcome

Course Outcomes	CO1	Design and excute detection of likely impurities in sample compounds agents
	CO2	Know about different function and role of major extracellular and intracellular electrolytes and buffer solutions
	CO3	Prepare different types gastrointenstinal agents and its category
	CO4	Carry out the preparation and study of important inorganic pharmceuticals
	C05	Analyze limit test and explain its significance



SCHOOL OF PHARMACY	ARKA JAIN University Jharkhand NAAC GRADE A		2nd INTERNAL EXAMINATION
Program Name	**BACHELOR OF PHARMACY**	Program Code	**B. PHARM**
Course Name	**Ph. Inorganic Chemistry (Practical)**	Semester	**1st Semester (Group-B)**
Course Code	**PHM21010**	Year	**November 2025**
Time: 4 Hours	**All the Questions are Compulsory**	Maximum Marks	**40**
		Time	**4 hrs.**
Knowledge Level (KL)	**K1 :** Remembering	**K3 :** Applying	**K5 :** Evaluating
	K2 : Understanding	**K4 :** Analysing	**K6 :** Creating

Section A

[1 x 10 = 10 Marks]

Q. No.	Questions	Marks	COs	KL	PO
I	**Synopsis** Write synopsis on Antacid. एंटासिड पर सारांश लिखें।	10	C03	K2	PO1,PO3,PO4

Section B

[15 + 10=25 Marks]

Q. No.	Questions	Marks	COs	KL	PO
II	a.Major Write an experiment on Modified Limit Test for Chlorides. क्लोराइड के लिए संशोधित सीमा परीक्षण पर एक प्रयोग लिखें।	15	C05	K3	PO1,PO4,PO7
	b.Minor Write the Identification Test for Ferrous Sulphate. फेरस सल्फेट के लिए पहचान परीक्षण लिखें।	10	C01	K3	PO1,PO3,PO10

Section C

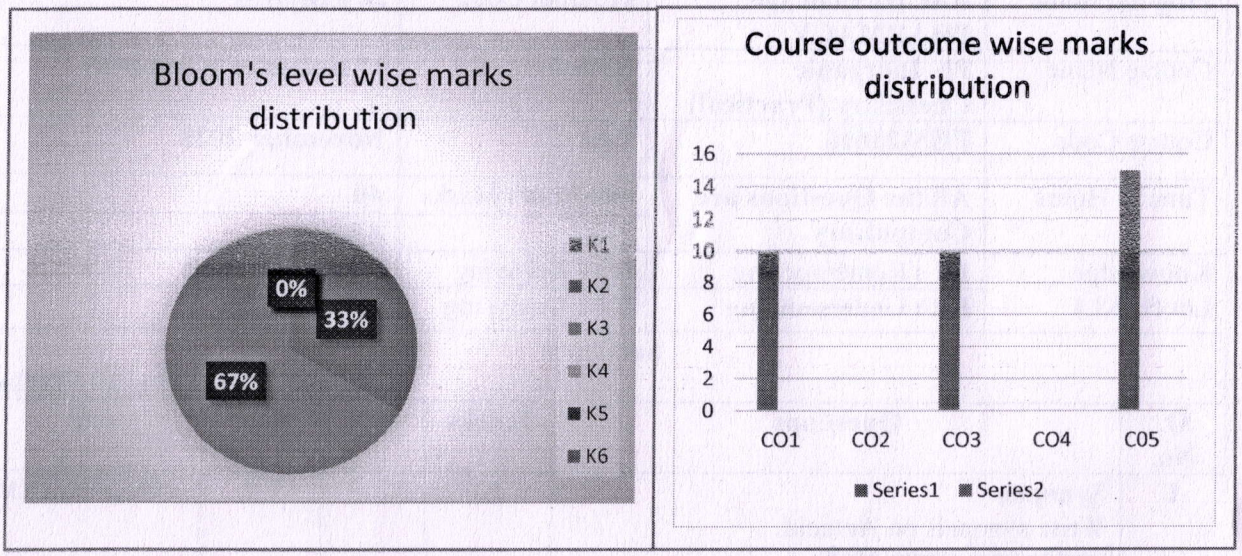
[05 Marks]

Q. No.	Questions	Marks	COs	KL	PO
III	Viva voce	05			

CO- Course Outcomes, KL- Knowledge Level, PO – Program Outcome

	CO1	Design and excute detection of likely impurities in sample compounds agents

Course Outcomes	CO2	Know about different function and role of major extracellular and intracellular electrolytes and buffer solutions
	CO3	Prepare different types gastrointenstinal agents and its category
	CO4	Carry out the preparation and study of important inorganic pharmaceuticals
	C05	Analyze limit test and explain its significance



SCHOOL OF PHARMACY	ARKA JAIN University Jharkhand NAAC GRADE A		2nd INTERNAL EXAMINATION
Program Name	**BACHELOR OF PHARMACY**	Program Code	**B. PHARM**
Course Name	**Ph. Inorganic Chemistry (Practical)**	Semester	**1st Semester (Group-C)**
Course Code	**PHM21010**	Year	**November 2025**
Time: 4 Hours	**All the Questions are Compulsory**	Maximum Marks	**40**
		Time	**4 hrs.**
Knowledge Level (KL)	**K1 :** Remembering	**K3 :** Applying	**K5 :** Evaluating
	K2 : Understanding	**K4 :** Analysing	**K6 :** Creating

Section A

[1 x 10 = 10 Marks]

Q. No.	Questions	Marks	COs	KL	PO
I	**Synopsis** Write Synopsis calcium carbonate & zinc eugenol cement. कैल्शियम कार्बोनेट और जिंक यूजेनॉल सीमेंट का सारांश लिखें।	10	C03	K2	PO1,PO3,PO4

Section B

[15 + 10=25 Marks]

Q. No.	Questions	Marks	COs	KL	PO
II	a. Major Write an experiment on Modified Limit Test for sulphates. सल्फेट्स के लिए संशोधित सीमा परीक्षण पर एक प्रयोग लिखें।	15	C05	K3	PO1,PO4,PO7
	b.Minor Write the Identification Test for Magnesium Hydroxide. मैग्नीशियम हाइड्रॉक्साइड के लिए पहचान परीक्षण लिखें।	10	C01	K3	PO1,PO4,PO7

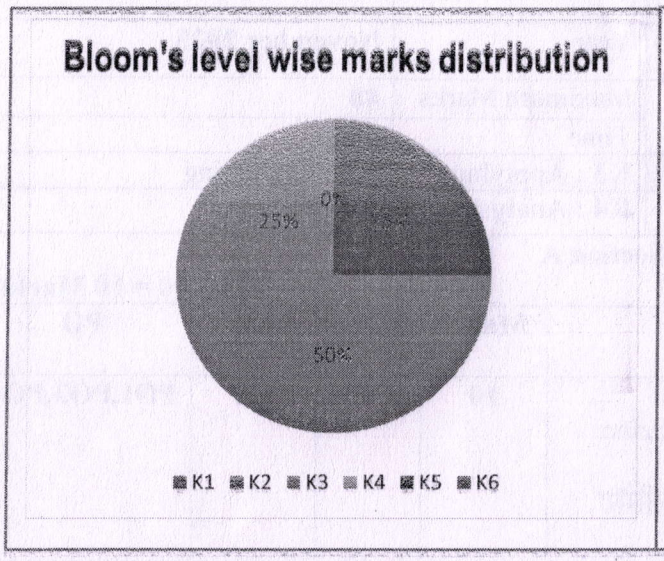
Section C

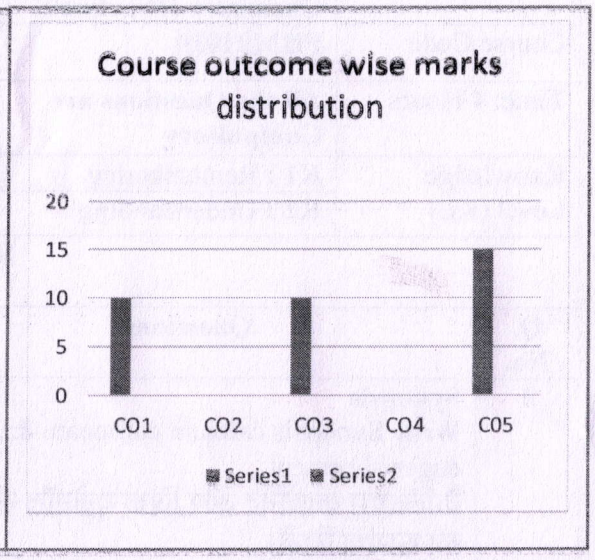
[05 Marks]

Q. No.	Questions	Marks	COs	KL	PO
III	Viva voce	05			

CO- Course Outcomes, KL- Knowledge Level, PO – Program Outcome

Course Outcomes	CO1	Design and excute detection of likely impurities in sample compounds agents
	CO2	Know about different function and role of major extracellular and intracellular electrolytes and buffer solutions
	CO3	Prepare different types gastrointenstinal agents and its category
	CO4	Carry out the preparation and study of important inorganic pharmaceuticals
	C05	Analyze limit test and explain its significance





SCHOOL OF PHARMACY	ARKA JAIN University Jharkhand NAAC GRADE A		2nd INTERNAL EXAMINATION
Program Name	**BACHELOR OF PHARMACY**	Program Code	**B. PHARM**
Course Name	**Ph. Inorganic Chemistry (Practical)**	Semester	**1st Semester (Group-D)**
Course Code	**PHM21010**	Year	**November 2025**
Time: 4 Hours	**All the Questions are Compulsory**	Maximum Marks	**40**
		Time	**4 hrs.**
Knowledge Level (KL)	**K1 :** Remembering	**K3 :** Applying	**K5 :** Evaluating
	K2 : Understanding	**K4 :** Analysing	**K6 :** Creating

Section A

[1 x 10 = 10 Marks]

Q. No.	Questions	Marks	COs	KL	PO
I	**Synopsis** Write Synopsis on acidifiers. अम्लकारकों पर सारांश लिखें।	10	CO2	K2	PO1, PO2, PO7

Section B

[15 + 10=25 Marks]

Q. No.	Questions	Marks	COs	KL	PO
II	a.Major Write the preparation of inorganic pharmaceutical boric acid. अकार्बनिक औषधीय बोरिक एसिड की तैयारी लिखें।	15	CO4	K3	PO1, PO3, PO10
	b.Minor Write the Identification Test for Magnesium Hydroxide. मैग्नीशियम हाइड्रॉक्साइड के लिए पहचान परीक्षण लिखें।	10	CO1	K3	PO1, PO4, PO7

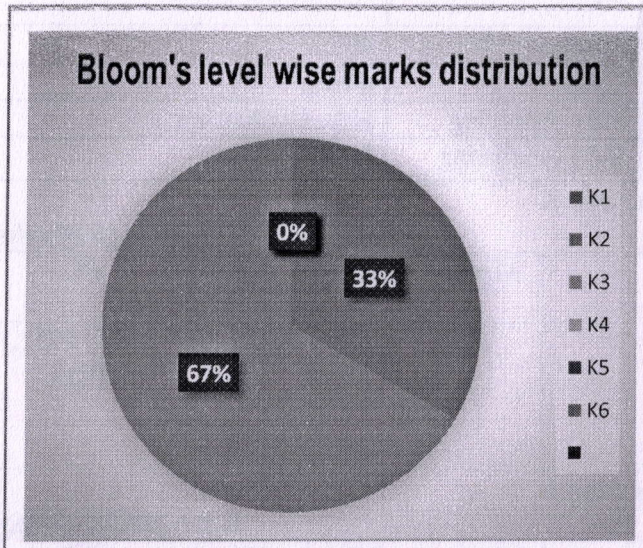
Section C

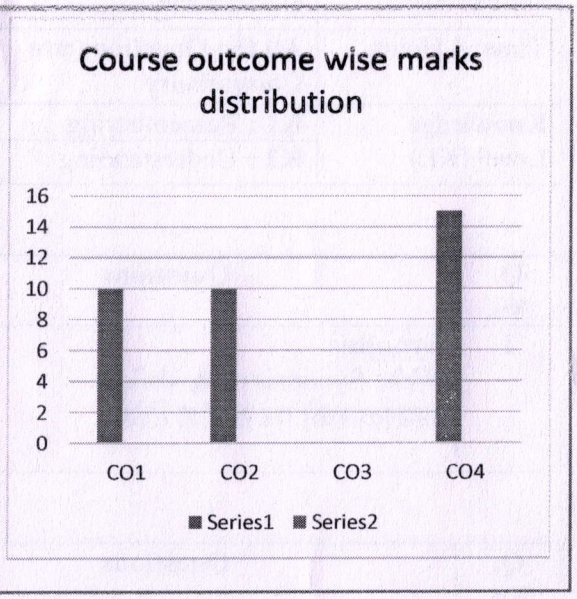
[05 Marks]

Q. No.	Questions	Marks	COs	KL	PO
III	Viva voce	05			

CO- Course Outcomes, KL- Knowledge Level, PO – Program Outcome

Course Outcomes	CO1	Design and excute detection of likely impurities in sample compounds agents
	CO2	Know about different function and role of major extracellular and intracellular electrolytes and buffer solutions
	CO3	Prepare different types gastrointenstinal agents and its category
	CO4	Carry out the preparation and study of important inorganic pharmceuticals
	C05	Analyze limit test and explain its significance





	ARKA JAIN University, Jharkhand — NAAC GRADE A	2nd INTERNAL EXAMINATION

Program Name	**BACHELOR OF PHARMACY**	Program Code	**B.PHARM**
Course Name	**COMMUNICATION SKILLS**	Semester	**I**
Course Code	**PHM21011**	Year	**2025/ODD**
Time: 4 Hours	**ALL THE QUESTIONS ARE COMPULSORY**	Maximum Marks	**20**

Knowledge Level (KL)	**K1** : Remembering	**K3** : Applying	**K5** : Evaluating
	K2 : Understanding	**K4** : Analysing	**K6** : Creating

Section A

SYNOPSIS [1 x 10 = 10 Marks]

Q. No.	Questions	Marks	COs	KL	PO
1(i)	**Rewrite the passage in around 40 words.** Trees give shade for the benefit of others, and while they themselves stand in the sun and endure the scorching heat, they produce the fruit of which others profit. The character of good men is like that of trees. What is the use of this perishable body if no use is made of it for the benefit of mankind? Sandalwood, the more it is rubbed, the more scent does it yield. Sugarcane, the more it is peeled and cut up into pieces, the more juice does it produce. The men who are noble at heart do not lose their qualities even in losing their lives. (105 words)	**10**	**2**	3	2

Section B

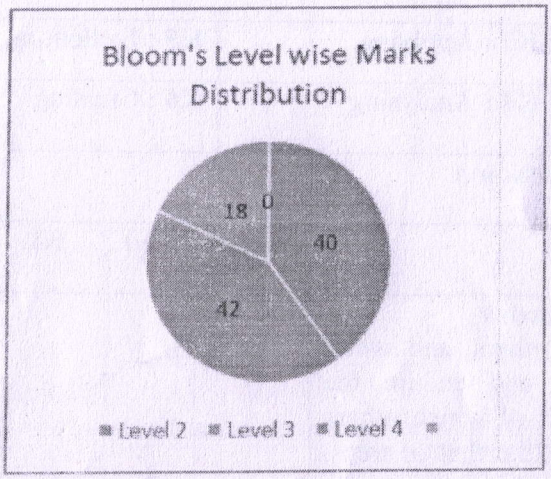
EXPERIMENT [1 x 5 = 05 Marks]

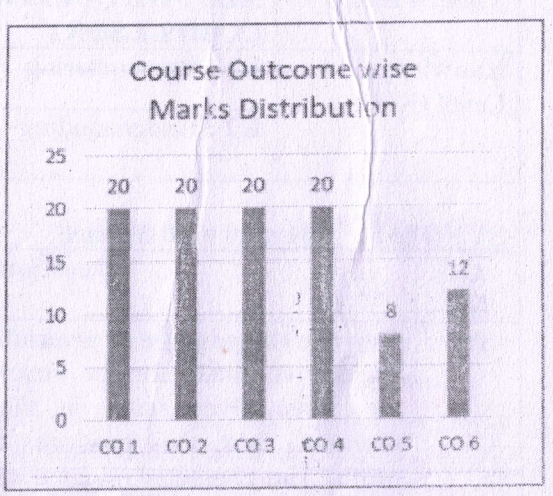
Q. No.	Questions	Marks	COs	KL	PO
1	Write a brief dialogue between a customer and a shopkeeper.	**05**	**3**	**4**	**2**

VIVA VOCE **[5 Marks]**

CO- Course Outcomes, KL- Knowledge Level, PO – Program Outcome

Course Outcomes	CO1	Apply the skills to communicate effectively without grammar mistake.
	CO2	Apply the ability to speak English by developing vocabulary, and understanding phonetics
	CO3	Apply the ability to write letter, essay, reports, curriculum vitae etc. in English.
	CO4	Understand the ability to listen and understand media, audio, video, speeches.
	CO5	Apply interview skills





School of Pharmacy	ARKA JAIN University Jharkhand		2nd INTERNAL EXAMINATION
Program Name	**BACHELOR OF PHARMACY**	Program Code	**B.PHARM**
Course Name	**REMEDIAL BIOLOGY**	Semester	**I**
Course Code	**PHM21012**	Year	**October/2025**
Time:	**ALL THE QUESTIONS ARE COMPULSORY**	Maximum Marks	**20**

Knowledge Level (KL)			
	K1 : Remembering	**K3 :** Applying	**K5 :** Evaluating
	K2 : Understanding	**K4 :** Analysing	**K6 :** Creating

Section A

[1 x 10 = 10 Marks]

Q. No.	Questions	Marks	COs	KL	PO
1	**SYNOPSIS** Write a synopsis on "Cell and its Inclusions." "कोशिका एवं उसके अंतःसमावेश विषय पर संक्षिप्त सारांश लिखिए।	10	CO2, CO5	K1, K2	PO1, PO3

Section B

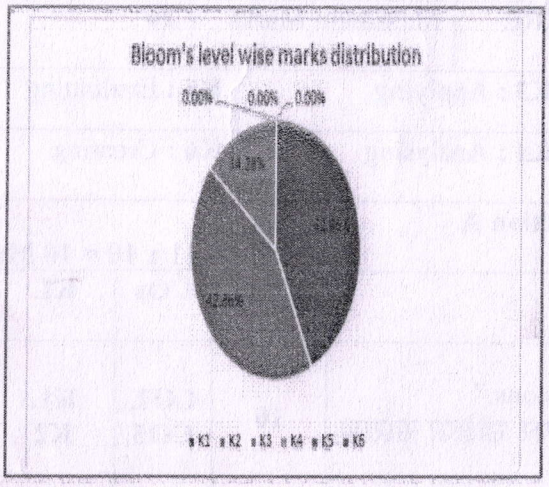
[1 x 5 = 05 Marks]

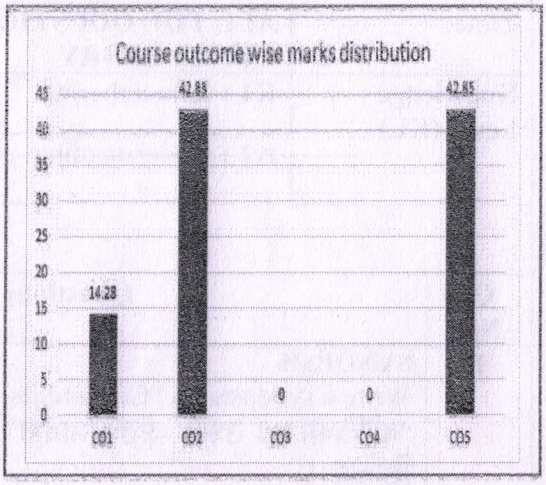
Q. No.	Questions	Marks	COs	KL	PO
2	**EXPERIMENT** Perform the T.S. (Transverse section) of supplied samples like leaves, stem and root and draw the labelled diagram. प्रदत्त नमूनों जैसे पत्ती, तना और जड़ का अनुप्रस्थ काट तैयार कीजिए तथा उसका सुव्यवस्थित एवं लेबलयुक्त चित्र बनाइए।	05	CO1, CO2, CO5	K1, K2, K3	PO1, PO10

3. <u>VIVA VOCE</u> **[5 Marks]**

CO- Course Outcomes, KL- Knowledge Level, PO – Program Outcome

Course Outcomes	CO1	Understand about the handling of microscopes and preparation of slides
	CO2	Know about the parts of plants and their microscopic characteristics
	CO3	Estimate different haematological parameters
	CO4	Know about the skeletal systems and bones
	CO5	Know Anatomy and Physiology of plants and animals





SCHOOL OF PHARMACY	ARKA JAIN University Jharkhand NAAC GRADE A		2nd INTERNAL EXAMINATION
Program Name	**BACHELOR OF PHARMACY**	Program Code	**B. PHARM**
Course Name	**Pharmaceutics I (Practical)**	Semester	**1th Semester (Group-B)**
Course Code	**PHM21009**	Year	**November 2025**
Time: 4 Hours	**All the Questions are Compulsory**	Maximum Marks	**40**
		Time	**4 hrs.**
Knowledge Level (KL)	**K1 :** Remembering	**K3 :** Applying	**K5 :** Evaluating
	K2 : Understanding	**K4 :** Analysing	**K6 :** Creating

Section A

[1 x 10 = 10 Marks]

Q. No.	Questions	Marks	COs	KL	PO
I	**Synopsis** Write a synopsis on emulsions. इमल्शन पर एक सारांश लिखिए।	10	CO2	K1, K2	

Section B

[15 + 10=25 Marks]

Q. No.	Questions	Marks	COs	KL	PO
II	a. Major To prepare and submit 20 ml of Liquid Paraffin Emulsion. तैयार करने के लिए और तरल पैराफिन इमल्शन के 20 मिलीलीटर जमा करने के लिए।	15	CO2, CO4	K3, K5, K6	
	b. Minor To prepare and submit 20 g of Effervescent Granules. 20 ग्राम चमकता हुआ कणिकाओं को तैयार करने और जमा करने के लिए।	10	CO2, CO4	K3, K5, K6	

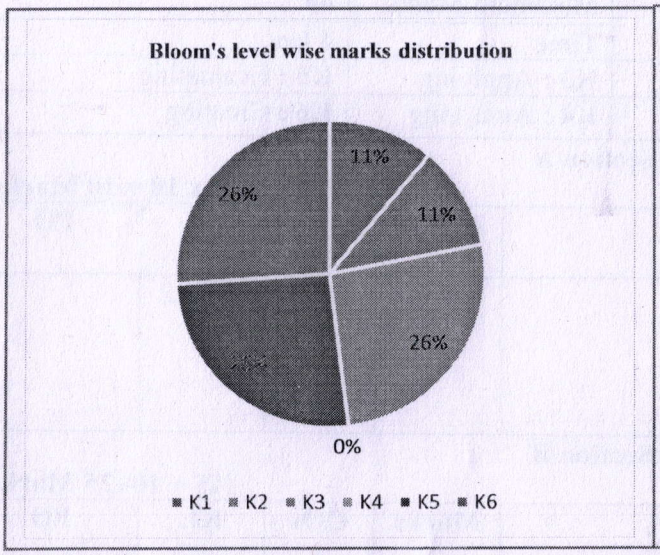
Section C

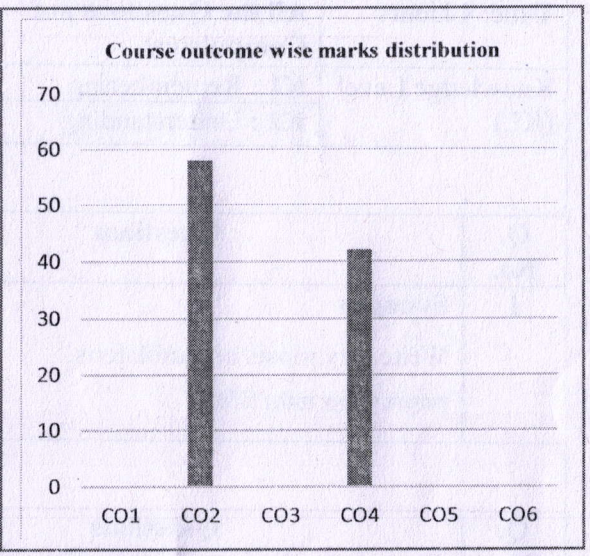
[05 Marks]

Q. No.	Questions	Marks	COs	KL	PO
III	Viva voce	05			

CO- Course Outcomes, KL- Knowledge Level, PO – Program Outcome

Course Outcomes	CO1	Remember the history of profession of pharmacy
	CO2	Understand the basics of different dosage forms, pharmaceutical incompatibilities and pharmaceutical calculations
	CO3	Apply the professional way of handling the prescription
	CO4	Apply the knowledge of various conventional dosage forms
	CO5	Understand various pharmaceutical incompatibilities and formulation techniques of suppositories
	CO6	Apply basic methodology to prepare various conventional semisolid dosage forms





SCHOOL OF PHARMACY	ARKA JAIN University, Jharkhand — NAAC GRADE A		2nd INTERNAL EXAMINATION
Program Name	**BACHELOR OF PHARMACY**	Program Code	**B. PHARM**
Course Name	**Pharmaceutics I (Practical)**	Semester	**1th Semester (Group-C)**
Course Code	**PHM21009**	Year	**November 2025**
Time: 4 Hours	**All the Questions are Compulsory**	Maximum Marks	**40**
		Time	**4 hrs.**
Knowledge Level (KL)	**K1 :** Remembering	**K3 :** Applying	**K5 :** Evaluating
	K2 : Understanding	**K4 :** Analysing	**K6 :** Creating

Section A

[1 x 10 = 10 Marks]

Q. No.	Questions	Marks	COs	KL	PO
I	**Synopsis** Write synopsis on monophasic liquid dosage form. मोनोफैसिक तरल खुराक के रूप में सारांश लिखें।	10	CO2	K1, K2	

Section B

[15 + 10=25 Marks]

Q. No.	Questions	Marks	COs	KL	PO
II	a. Major To prepare and submit 20 ml of Strong Solution of Ammonium Acetate. तैयार करने के लिए और अमोनियम एसीटेट के मजबूत समाधान के 20 मिलीलीटर जमा करने के लिए।	15	CO2, CO4	K3, K5, K6	
	b. Minor To prepare and submit 20 g of Carbopol Gel. 20 ग्राम कार्बोपोल जेल तैयार करने और जमा करने के लिए।	10	CO2, CO4	K3, K5, K6	

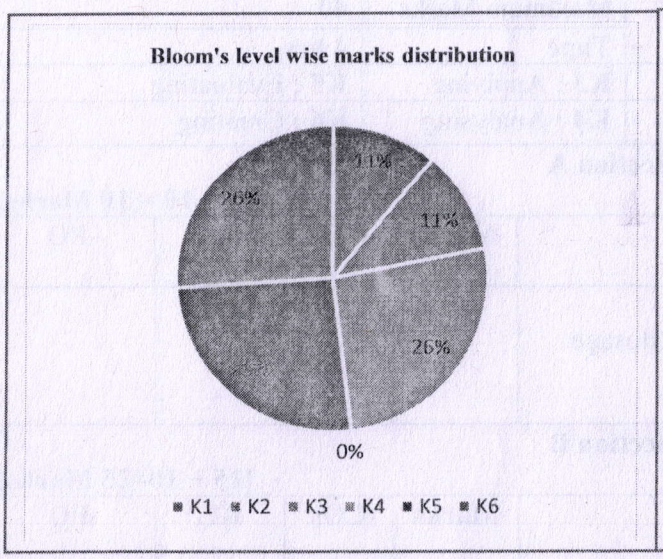
Section C

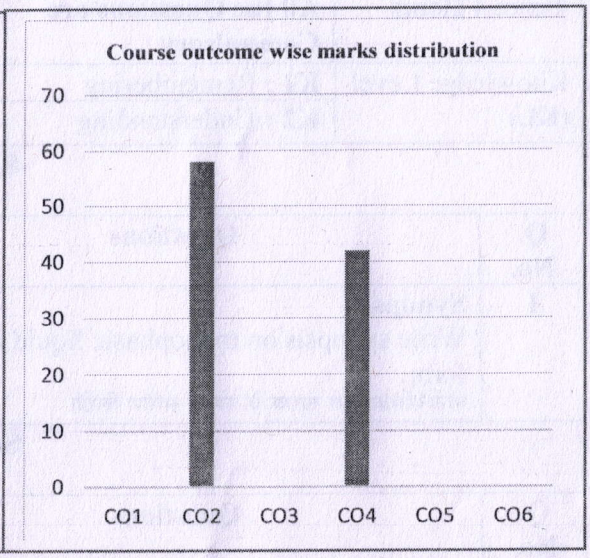
[05 Marks]

Q. No.	Questions	Marks	COs	KL	PO
III	Viva voce	05			

CO- Course Outcomes, KL- Knowledge Level, PO – Program Outcome

Course Outcomes	CO1	Remember the history of profession of pharmacy
	CO2	Understand the basics of different dosage forms, pharmaceutical incompatibilities and pharmaceutical calculations
	CO3	Apply the professional way of handling the prescription
	CO4	Apply the knowledge of various conventional dosage forms
	CO5	Understand various pharmaceutical incompatibilities and formulation techniques of suppositories
	CO6	Apply basic methodology to prepare various conventional semisolid dosage forms





SCHOOL OF PHARMACY	ARKA JAIN University Jharkhand | NAAC GRADE A		2nd INTERNAL EXAMINATION
Program Name	**BACHELOR OF PHARMACY**	Program Code	**B. PHARM**
Course Name	**Pharmaceutics I (Practical)**	Semester	**1th Semester (Group-D)**
Course Code	**PHM21009**	Year	**November 2025**
Time: 4 Hours	**All the Questions are Compulsory**	Maximum Marks	**40**
		Time	**4 hrs.**
Knowledge Level (KL)	**K1 :** Remembering	**K3 :** Applying	**K5 :** Evaluating
	K2 : Understanding	**K4 :** Analysing	**K6 :** Creating

Section A

[1 x 10 = 10 Marks]

Q. No.	Questions	Marks	COs	KL	PO
I	**Synopsis** Write synopsis on liquid dosage forms. तरल खुराक रूपों पर सारांश लिखें।	10	CO2	K1, K2	

Section B

[15 + 10=25 Marks]

Q. No.	Questions	Marks	COs	KL	PO
II	a. Major To prepare and dispense 20 ml of Calamine lotion. कैलामाइन लोशन के 20 मिलीलीटर तैयार करने और वितरित करने के लिए।	15	CO2, CO4	K3, K5, K6	
	b. Minor To prepare and submit 20 g of Effervescent Granules. 20 ग्राम चमकता हुआ कणिकाओं को तैयार करने और जमा करने के लिए।	10	CO2, CO4	K3, K5, K6	

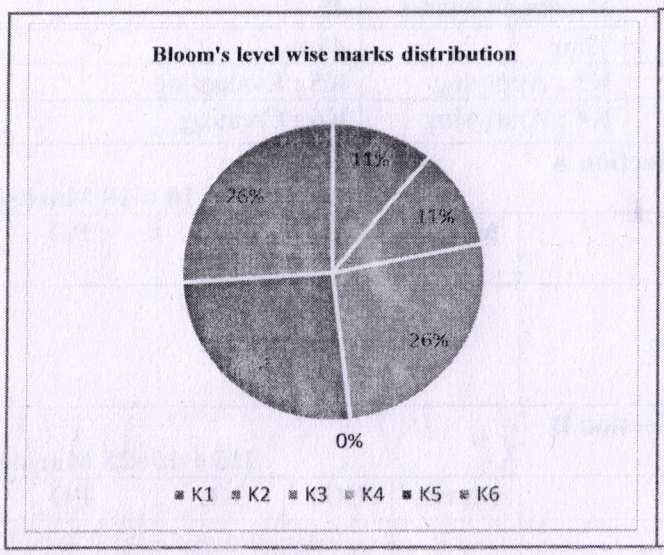
Section C

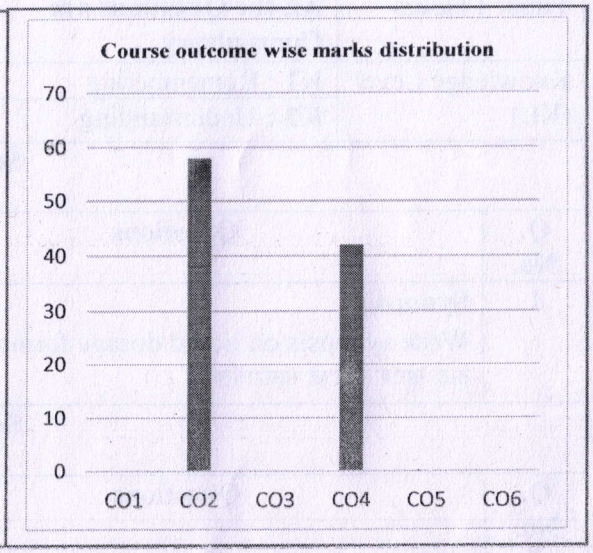
[05 Marks]

Q. No.	Questions	Marks	COs	KL	PO
III	Viva voce	05			

CO- Course Outcomes, KL- Knowledge Level, PO – Program Outcome

Course Outcomes	CO1	Remember the history of profession of pharmacy
	CO2	Understand the basics of different dosage forms, pharmaceutical incompatibilities and pharmaceutical calculations
	CO3	Apply the professional way of handling the prescription
	CO4	Apply the knowledge of various conventional dosage forms
	CO5	Understand various pharmaceutical incompatibilities and formulation techniques of suppositories
	CO6	Apply basic methodology to prepare various conventional semisolid dosage forms





SCHOOL OF PHARMACY	ARKA JAIN University Jharkhand NAAC GRADE A		2nd INTERNAL EXAMINATION
Program Name	**BACHELOR OF PHARMACY**	Program Code	**B. PHARM**
Course Name	**Pharmaceutical analysis I (Practical)**	Semester	**2nd Semester (Group-A)**
Course Code	**PHM21008**	Year	**November 2025**
Time: 4 Hours	**All the Questions are Compulsory**	Maximum Marks	**40**
		Time	**4 hrs.**
Knowledge Level (KL)	**K1 :** Remembering	**K3 :** Applying	**K5 :** Evaluating
	K2 : Understanding	**K4 :** Analysing	**K6 :** Creating

Section A

[1 x 10 = 10 Marks]

Q. No.	Questions	Marks	COs	KL	PO
I	**Synopsis** Write about Quinonoid theory of acid-base indicator	10	CO3	K1,K3	PO1

Section B

[15 + 10=25 Marks]

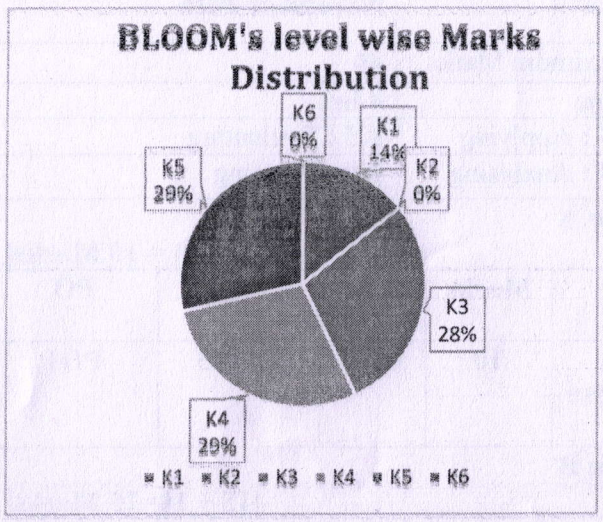
Q. No.	Questions	Marks	COs	KL	PO
II	a. Major Prepare and standardize 0.1N Potassium Permanganate solution	15	CO3	K3,K4,K5	PO2
	b.Minor Assay of Ferrous Sulphate	10	CO5	K4,K5	PO1

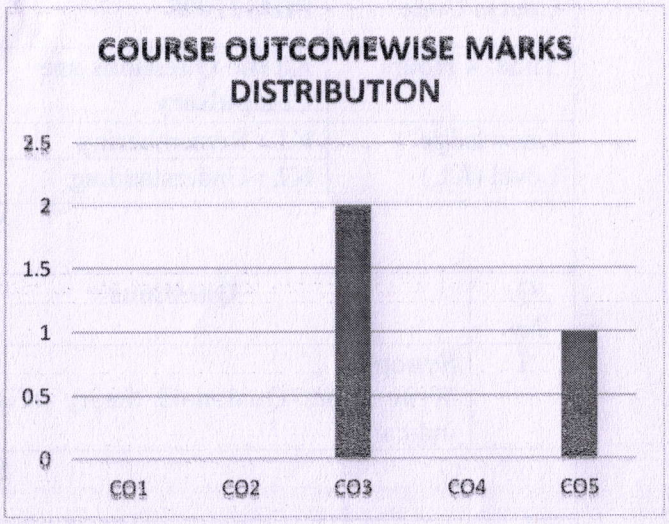
Section C

[05 Marks]

Q. No.	Questions	Marks	COs	KL	PO
III	Viva voce	05			

Course Outcomes	CO1	Understand the basic apparatus and instruments and their calibration
	CO2	Apply the fundamental methodology to prepare different strength of standard solutions.
	CO3	Evaluate different types of titrations (neutralization, non-aqueous, precipitation, complexometric and redox titrations)
	CO4	Evaluate to standardize different standard solutions
	CO5	Evaluate assay of different drugs by titrimetric method





SCHOOL OF PHARMACY	ARKA JAIN University Jharkhand | NAAC GRADE A		1st INTERNAL EXAMINATION
Program Name	**BACHELOR OF PHARMACY**	Program Code	**B. PHARM**
Course Name	**Pharmaceutical analysis I (Practical)**	Semester	**2nd Semester (Group-B)**
Course Code	**PHM21008**	Year	**November 2025**
Time: 4 Hours	**All the Questions are Compulsory**	Maximum Marks	**40**
		Time	**4 hrs.**
Knowledge Level (KL)	**K1 :** Remembering	**K3 :** Applying	**K5 :** Evaluating
	K2 : Understanding	**K4 :** Analysing	**K6 :** Creating

Section A

[1 x 10 = 10 Marks]

Q. No.	Questions	Marks	COs	KL	PO
I	**Synopsis** Write synopsis on Oswald's theory of acid-base indicator	10	CO3	K1,K3	PO1

Section B

[15 + 10=25 Marks]

Q. No.	Questions	Marks	COs	KL	PO
II	a. Major Prepare and standardize 0.1 N Potassium Permanganate solution.	15	CO3	K3,K4,K5	PO2
	b. Minor Assay of supplied Ferrous Sulphate	10	CO5	K4,K5	PO1

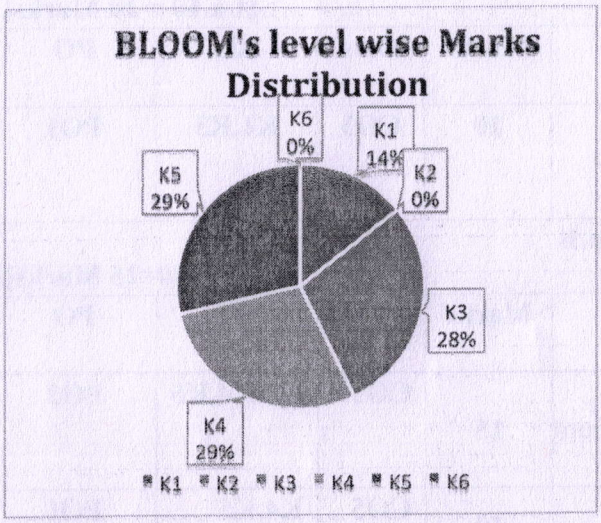
Section C

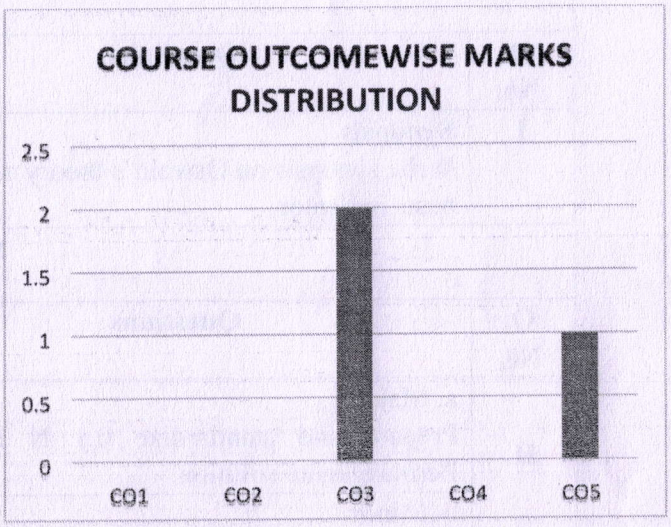
[05 Marks]

Q. No.	Questions	Marks	COs	KL	PO
III	Viva voce	05			

CO- Course Outcomes, KL- Knowledge Level, PO – Program Outcome

Course Outcomes	CO1	Understand the basic apparatus and instruments and their calibration
	CO2	Apply the fundamental methodology to prepare different strength of standard solutions.
	CO3	Evaluate different types of titrations (neutralization, non-aqueous, precipitation, complexometric and redox titrations)
	CO4	Evaluate to standardize different standard solutions
	CO5	Evaluate assay of different drugs by titrimetric method





SCHOOL OF PHARMACY	ARKA JAIN University Jharkhand | NAAC GRADE A		2nd INTERNAL EXAMINATION
Program Name	**BACHELOR OF PHARMACY**	Program Code	**B. PHARM**
Course Name	**Pharmaceutical analysis I (Practical)**	Semester	**2nd Semester (Group-C)**
Course Code	**PHM21008**	Year	**November 2025**
Time: 4 Hours	**All the Questions are Compulsory**	Maximum Marks	**40**
		Time	**4 hrs.**
Knowledge Level (KL)	**K1 :** Remembering	**K3 :** Applying	**K5 :** Evaluating
	K2 : Understanding	**K4 :** Analysing	**K6 :** Creating

Section A

[1 x 10 = 10 Marks]

Q. No.	Questions	Marks	COs	KL	PO
I	**Synopsis** Write the synopsis on Arrhenius theory of acid and base	10	CO3	K1,K2,K3	PO1

Section B

[15 + 10=25 Marks]

Q. No.	Questions	Marks	COs	KL	PO
II	a. Major Prepare and Standardize 0.1N Potassium Permanganate solution .	15	CO3	K3,K4,K5	PO2
	b.Minor Write Assay of supplied ammonium chloride	10	CO5	K4, K5	PO1

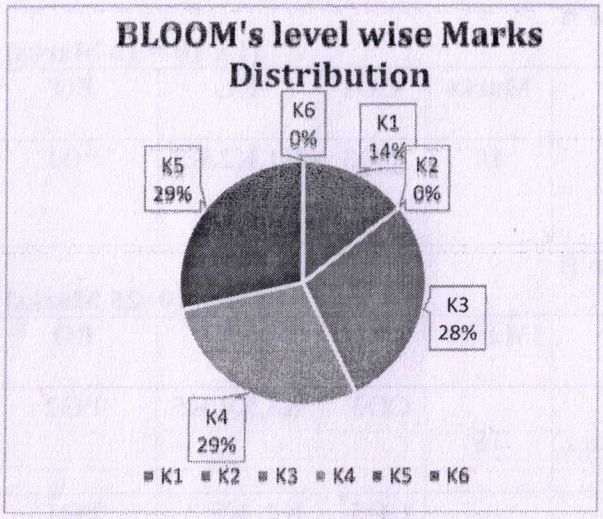
Section C

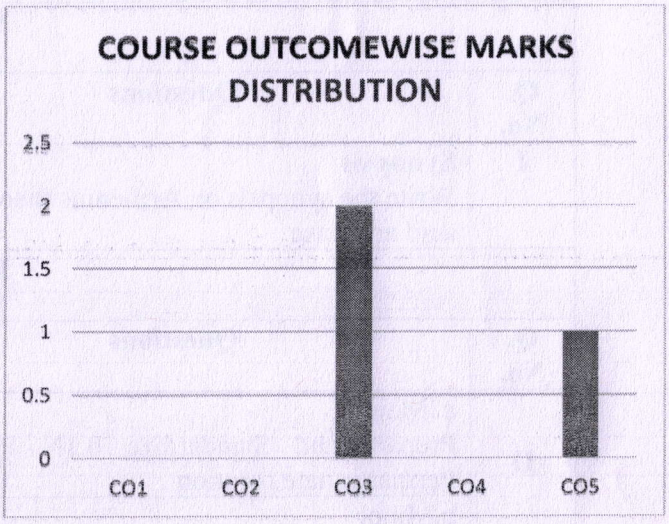
[05 Marks]

Q. No.	Questions	Marks	COs	KL	PO
III	Viva voce	05			

CO- Course Outcomes, KL- Knowledge Level, PO – Program Outcome

Course Outcomes	CO1	Understand the basic apparatus and instruments and their calibration
	CO2	Apply the fundamental methodology to prepare different strength of standard solutions.
	CO3	Evaluate different types of titrations (neutralization, non-aqueous, precipitation, complexometric and redox titrations)
	CO4	Evaluate to standardize different standard solutions
	CO5	Evaluate assay of different drugs by titrimetric method





SCHOOL OF PHARMACY	ARKA JAIN University Jharkhand | NAAC GRADE A		2nd INTERNAL EXAMINATION
Program Name	**BACHELOR OF PHARMACY**	Program Code	**B. PHARM**
Course Name	**Pharmaceutical analysis I (Practical)**	Semester	**2nd Semester (Group-D)**
Course Code	**PHM21008**	Year	**November 2025**
Time: 4 Hours	**All the Questions are Compulsory**	Maximum Marks	**40**
		Time	**4 hrs.**
Knowledge Level (KL)	**K1 :** Remembering	**K3 :** Applying	**K5 :** Evaluating
	K2 : Understanding	**K4 :** Analysing	**K6 :** Creating

Section A

[1 x 10 = 10 Marks]

Q. No.	Questions	Marks	COs	KL	PO
I	**Synopsis** Write about Bronsted lowry theory of acid and base titration	10	CO3	K1, K3	PO1

Section B

[15 + 10=25 Marks]

Q. No.	Questions	Marks	COs	KL	PO
II	a. Major Prepare and Standardize 0.1N Potassium permanganate solution.	15	CO3	K3, K4, K5	PO2
	b.Minor Assay of ferrous sulphate	10	CO5	K4, K5	PO1

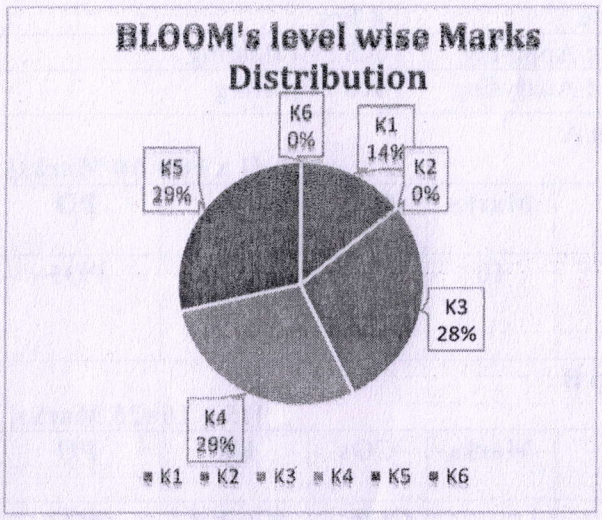
Section C

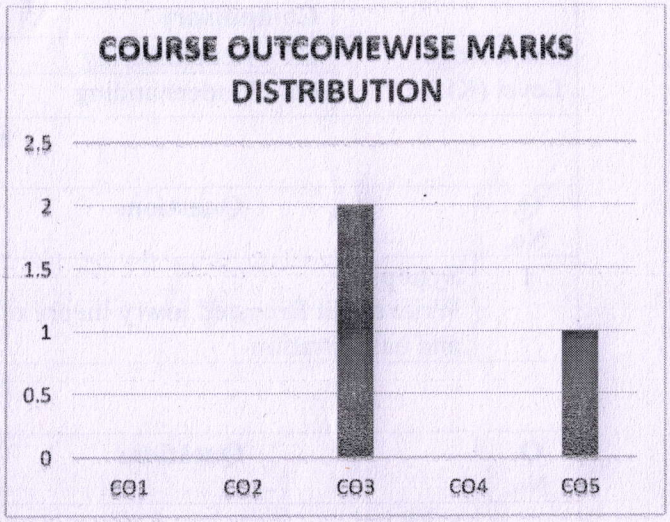
[05 Marks]

Q. No.	Questions	Marks	COs	KL	PO
III	Viva voce	05			

CO= Course Outcomes, KL= Knowledge Level, PO = Program Outcome

Course Outcomes	CO1	Understand the basic apparatus and instruments and their calibration
	CO2	Apply the fundamental methodology to prepare different strength of standard solutions.
	CO3	Evaluate different types of titrations (neutralization, non-aqueous, precipitation, complexometric and redox titrations)
	CO4	Evaluate to standardize different standard solutions
	CO5	Evaluate assay of different drugs by titrimetric method





SCHOOL OF PHARMACY	ARKA JAIN University, Jharkhand — NAAC GRADE A		2nd INTERNAL EXAMINATION
Program Name	**BACHELOR OF PHARMACY**	Program Code	**B. PHARM**
Course Name	**Pharmaceutics I (Practical)**	Semester	**1th Semester (Group-A)**
Course Code	**PHM21009**	Year	**November 2025**
Time: 4 Hours	**All the Questions are Compulsory**	Maximum Marks	**40**
		Time	**4 hrs.**
Knowledge Level (KL)	**K1 :** Remembering	**K3 :** Applying	**K5 :** Evaluating
	K2 : Understanding	**K4 :** Analysing	**K6 :** Creating

Section A

[1 x 10 = 10 Marks]

Q. No.	Questions	Marks	COs	KL	PO
I	**Synopsis** Write a synopsis on Suspensions. निलंबन पर एक सारांश लिखें।	10	CO2	K1, K2	

Section B

[15 + 10=25 Marks]

Q. No.	Questions	Marks	COs	KL	PO
II	a. Major To prepare and dispense 20 ml of Calamine lotion. कैलामाइन लोशन के 20 मिलीलीटर तैयार करने और वितरित करने के लिए।	15	CO2, CO4	K3, K5, K6	
	b. Minor To prepare and dispense 50 ml of ORS powder solution. तैयार करने के लिए और ओआरएस पाउडर समाधान के 50 मिलीलीटर बांटने के लिए।	10	CO2, CO4	K3, K5, K6	

Section C

[05 Marks]

Q. No.	Questions	Marks	COs	KL	PO
III	Viva voce	05			

CO- Course Outcomes, KL- Knowledge Level, PO – Program Outcome

Course Outcomes	CO1	Remember the history of profession of pharmacy
	CO2	Understand the basics of different dosage forms, pharmaceutical incompatibilities and pharmaceutical calculations
	CO3	Apply the professional way of handling the prescription
	CO4	Apply the knowledge of various conventional dosage forms
	CO5	Understand various pharmaceutical incompatibilities and formulation techniques of suppositories
	CO6	Apply basic methodology to prepare various conventional semisolid dosage forms