
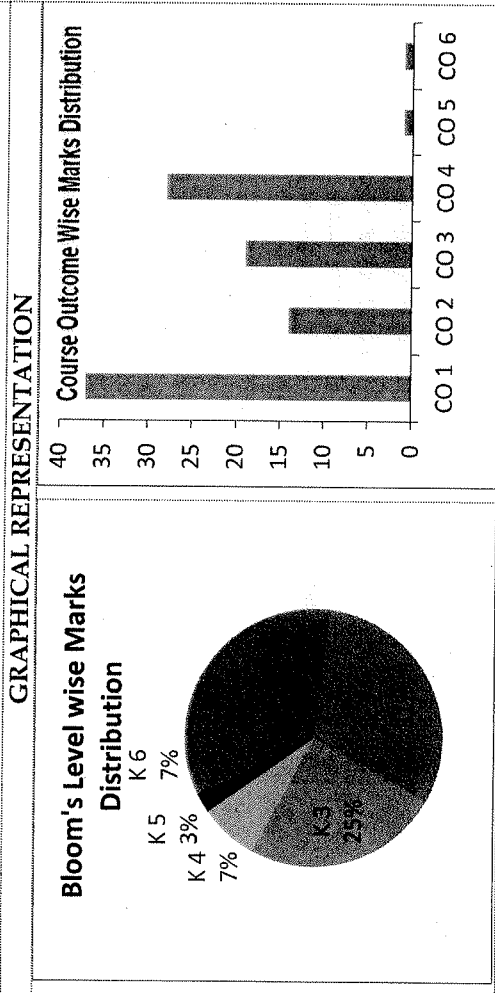
	<b>ARKA JAIN University</b> Jharkhand		<b>2<sup>nd</sup> INTERNAL EXAMINATION</b> School of Pharmacy		
			Branch	B. Pharmacy	Program
Subject Name	Biochemistry (Theory)	Semester	II	Year	April 2026
Time: 1 Hour Max. Marks : 30	• Answer all Questions of Section A (Compulsory) • Answer Any <i>One</i> out of <i>Two</i> of Section B • Answer Any <i>Two</i> out of <i>Three</i> of Section C • Possession of <u>Mobile Phones</u> or any kind of <u>Written Material, Arguments with the Invigilator or Discussing with Co-Student</u> will come under <u>Unfair Means</u> and will <u>Result</u> in the <u>Cancellation of the Papers.</u>				
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. N1	QUESTIONS	Marks	COs	KL	PO
i	Which among is the rate limiting enzyme of glycolysis? a) Hexokinase b) Pyruvate kinase c) Phosphofructokinase-1 d) Aldolase. ग्लाइकोलाइसिस का रेट लिमिटिंग एंजाइम कौन सा है? a) हेक्सोकाइनेज b) पाइरूवेट किनेज c) फॉस्फोफ्रक्टोकिनेज-1 d) एल्डोलोज	1	CO2	K1, K2	PO1
ii	What is the non-protein part of an enzyme called? a) Apoenzyme c) co-factor एंजाइम के नॉन-प्रोटीन हिस्से को क्या कहते हैं? a) एपोएंजाइम c) को-फैक्टर b) Holoenzyme d) Substrate	1	CO6	K1, K2	PO2
iii	Which intermediate of the citric acid cycle is dehydrogenated to form fumarate? a) Fumarate C) Succinate साइट्रिक एसिड साइकिल में फ्यूमरेट बनाने के लिए क्या डीहाइड्रोजनेटेड होता है? a) फ्यूमरेट C) सक्सिनेट b) Citrate d) succinate	1	CO2	K1	PO1
iv	Lineweaver-Burk plot is also known as _____ a) Double reciprocal plot c) Bell-shaped curve लाइनवीवर-बर्क प्लॉट को और क्या कहते हैं? a) डबल रीप्रोसिकल प्लॉट c) बेल-शेपेड कर्व	1	CO6	K1, K2	PO2

CO- Course Outcomes,	KL- Knowledge Level,	PO – Program Outcome
CO1	Remember about chemistry and biological importance of biological macromolecules and biochemical energetic.	
CO2	Understand the metabolism of carbohydrate in physiological and pathological conditions and biological oxidation of nutrient molecules.	
CO3	Understand the metabolism of lipids in physiological and pathological conditions.	
CO4	Understand the metabolism of proteins in physiological and pathological conditions.	
CO5	Understand the genetic organization of mammalian genome and functions of DNA in the synthesis of RNAs and proteins.	
CO6	Understand the catalytic role of enzymes, importance of enzyme inhibitors in design of new drugs, therapeutic and diagnostic applications of enzymes.	



v	<p>a) डबल रेसिप्रोकल एंजाइम c) बैल-शेफ्ट कर्व</p> <p>What among is the work of Competitive inhibitors? a) Bind to active site c) Increase <math>V_{max}</math> d) Destroy enzyme</p> <p>कार्मिपेटिव इनहिबिटर्स का काम क्या है? a) एक्टिव साइट से जुड़ना b) इरिवर्सिबल रूप से जुड़ना c) <math>V_{max}</math> बढ़ाना d) एंजाइम को नष्ट करना</p>	1	CO6	K1, K2	PO2
vi	<p>What is the net gain of ATP molecules produced in glycolysis? a)1 c)4</p> <p>ग्लाइकोलाइसिस में बनने वाले ATP मॉलिक्यूल्स का नेट गेन क्या है? a)1 c)4</p>	1	CO2	K1, K2	PO1, PO2
vii	<p>Which class of enzymes uses water to break down molecules? a) Ligases c) Isomerase एंजाइमों का कौन सा वर्ग मॉलिक्यूल्स को तोड़ने के लिए पानी का इस्तेमाल करता है? a) लाइगेस c) आइसोमेरेस</p> <p>b) Hydrolyases d) Transferases</p>	1	CO2	K1, K2	PO1, PO2
viii	<p>In allosteric regulation, the regulator molecule binds to which part of the enzyme? a) The active site c) A separate allosteric site एलोस्टेरिक रेगुलेशन में रेगुलेटर मॉलिक्यूल एंजाइम के किस हिस्से से जुड़ता है? a) एक्टिव साइट c) एक अलग एलोस्टेरिक साइट</p> <p>b) The substrate d) The coenzyme</p> <p>b) हाइड्रोलासेस d) ट्रांसफरेस</p>	1	CO2	K1, K2	PO1, PO2
ix	<p>What is the end Product of glycolysis under anaerobic conditions? a) Acetyl-CoA c) <math>CO_2</math> एनरोबिक कंडीशन में ग्लाइकोलाइसिस का एंड प्रोडक्ट क्या है? a) एसिटाइल-CoA c) <math>CO_2</math></p> <p>b) Lactate d) Oxaloacetate</p> <p>b) लैक्टेट d) ऑक्सालोएसिटेट</p>	1	CO2	K1, K2	PO2
x	<p>Which class of enzyme breaks down starch? a) Lipase c) Protease कौन सा एंजाइम स्टार्च को तोड़ता है? a) लिपाज c) प्रोटीज</p> <p>b) Amylase d) Nuclease</p> <p>b) एमाइलाज d) न्यूक्लियाज</p>	1	CO1	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	Give the derivation of Michaelis-Menton equation and also explain factor affecting enzyme activity. माइकेलिस-मेंटन इक्वेशन का डेरिवेशन बताएं और एंजाइम एक्टिविटी पर असर डालने वाले फैक्टर को भी समझाएं।	10	CO6	K2, K4	PO1, PO10
3	Explain the electron transport chain and oxidative phosphorylation? इलेक्ट्रॉन ट्रांसपोर्ट चेन और ऑक्सीडेटिव फॉस्फोरिलेशन के बारे में बताएं?	10	CO5	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	What is an enzyme inhibitor? Write the difference between competitive and non-competitive inhibition? एंजाइम इन्हिबिटर क्या है? कॉमपेटिटिव और नॉन-कॉमपेटिटिव इन्हिबिशन के बीच कोई दो अंतर लिखें?	5	CO6	K1, K2	PO1, PO2
5	List the six main classes of enzymes according to the standard IUB system. Give a brief explanation of each class. स्टैंडर्ड IUB सिस्टम के अनुसार एंजाइम के छह मुख्य क्लास की लिस्ट बनाएं। इनमें से कोई भी क्लास क्या करता है, इसका छोटा सा एक्सप्लेनेशन दें।	5	CO6	K1, K3	PO1
6	Explain the glycolysis pathway? ग्लाइकोलाइसिस पथवे के रेगुलेशन को समझाएं?	5	CO1	K1, K2	PO1, PO2

Branch	B Pharmacy	Program	Pharmacy
Subject Name	Pharmaceutical Organic Chemistry I (Theory)	Semester	II
		Year	April 2026

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 come 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. N1	QUESTIONS	Marks	COs	KL	PO
i	The sp <sup>3</sup> hybridization is a characteristic feature of which of the following? (a) Alkanes (b) Alkenes (c) Alkynes (d) Dienes sp <sup>3</sup> संकरण निम्नलिखित में से किसकी एक प्रमुख विशेषता है? (a) एल्केन (b) एल्कीन (c) एल्काइन (d) डायन	1	CO1	K1	PO1
ii	Markownikoff's rule is applied during the addition of hydrogen halides to: (a) Symmetrical alkanes (b) Unsymmetrical alkenes (c) Alcohols (d) Alkyl halides हॉइडोजन हैलाइड्स को किसमें जोड़ते समय मार्कोनिकोफ का नियम लागू होता है? (a) सममित एल्केन (b) असममित एल्कीन (c) अल्कोहल (d) अल्काइल हैलाइड	1	CO2	K1	PO1
iii	Which of the following alkyl halides will undergo an fastest SN1 reaction? (a) Primary alkyl halide (b) Secondary alkyl halide (c) Tertiary alkyl halide (d) Methyl halide निम्नलिखित में से कौन सा अल्काइल हैलाइड सबसे तेजी से SN1 प्रतिक्रियासे गुजरेगा? (a) प्राइमरी अल्काइल हैलाइड (b) सेकेंडरी अल्काइल हैलाइड (c) टर्शियरी अल्काइल हैलाइड (d) मिथाइल हैलाइड	1	CO3	K2	PO1
iv	What is the primary medical use of Chloroform? (a) Antipyretic (b) Anesthetic / Solvent (c) Antibiotic (d) Antacid	1	CO4	K1	PO1

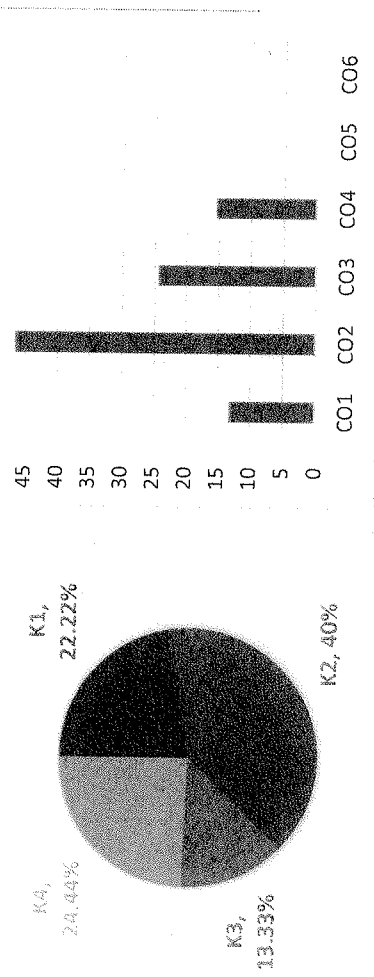
CO- Course Outcomes, KL- Knowledge Level, PO – Program Outcome

CO1	Analyze the structure, name and the type of isomerism of the organic compound
CO2	Understand the reaction, name the reaction and orientation of reactions
CO3	Analyze the reactivity/ stability of compounds,
CO4	Apply the identification of organic compound
CO5	Apply the knowledge the naming reactions of carbonyl compounds and molecular model
CO6	Apply preliminary test of aliphatic and aromatic compounds and common laboratory techniques including reflux, distillation, recrystallization, vacuum filtration, etc.

**GRAPHICAL REPRESENTATION**

**BLOOM'S LEVEL WISE MARKS DISTRIBUTION**

Course Outcome Wise Marks Distribution



CO1 CO2 CO3 CO4 CO5 CO6

	क्लोरोफॉर्म का प्राथमिक चिकित्सीय उपयोग क्या है? (a) एंटीपापरेटिक (b) एन्सेप्टिक / विलयक (c) एंटीबायोटिक (d) एंटासिड				
v	The addition of HBr to propene in the presence of peroxide yields 1-bromopropane. This is an example of: (a) Saytzeff's rule (b) Anti-Markownikoff's rule (c) Hoffmann rule (d) Diels-Alder reaction पेरॉक्साइड की उपस्थिति में प्रोपीन में HBr मिलाने पर 1-ब्रोमोप्रोपेन प्राप्त होता है। यह किसका उदाहरण है: (a) सैटजेफ का नियम (b) एंटी-मार्कोविकोफ का नियम (c) हॉफमैन नियम (d) डायल्स-एल्डर प्रतिक्रिया	1	CO2	K2	PO2
vi	The Diels-Alder reaction is a characteristic reaction of: (a) Alcohols (b) Alkyl halides (c) Conjugated dienes (d) Alkanes डायल्स-एल्डर प्रतिक्रिया किसकी एक विशिष्ट प्रतिक्रिया है? (a) अल्कोहल (b) अल्काइल हैलाइड (c) संयुग्मित डायन (d) एल्केन	1	CO2	K1	PO1
vii	E1 and E2 reactions fall under which major category of organic reactions? (a) Addition reactions (b) Elimination reactions (c) Substitution reactions (d) Rearrangement reactions E1 और E2 प्रतिक्रियाएँ कार्बनिक प्रतिक्रियाओं की किस प्रमुख श्रेणी के अंतर्गत आती हैं? (a) योगात्मक प्रतिक्रियाएँ (b) विलोपन प्रतिक्रियाएँ (c) प्रतिस्थापन प्रतिक्रियाएँ (d) पुनर्व्यवस्था प्रतिक्रियाएँ	1	CO2	K1	PO1
viii	Which qualitative test is commonly used to distinguish between primary, secondary, and tertiary alcohols? (a) Tollens' test (b) Fehling's test (c) Lucas test (d) Biuret test प्राथमिक, द्वितीयक और तृतीयक अल्कोहल के बीच अंतर करने के लिए आम तौर पर किस गुणात्मक परीक्षण का उपयोग किया जाता है? (a) टॉलेन्स परीक्षण (b) फेहलिंग परीक्षण (c) लुकास परीक्षण (d) बायुरेट परीक्षण	1	CO4	K3	PO1
ix	In an SN2 reaction mechanism, the stereochemistry of the final product typically results in: (a) Complete inversion of configuration (b) Retention of configuration (c) Racemization (d) No change in stereochemistry SN2 प्रतिक्रिया तंत्र में, अंतिम उत्पाद की स्टीरियोकेमिस्ट्री (stereochemistry) के परिणामस्वरूप आम तौर पर क्या होता है: (a) विन्यास का पूर्ण (b) विन्यास का (c) रेसैमाइजेशन (d) स्टीरियोकेमिस्ट्री में कोई बदलाव नहीं	1	CO2	K2	PO1
x	Which of the following is a key characteristic of the SN1 reaction mechanism? (a) It is a concerted (single-step) mechanism. (b) It proceeds via the formation of a carbocation intermediate.	1	CO2	K4	PO2

	(c) It requires a strong base. (d) The rate depends on both the substrate and the nucleophile. निम्नलिखित में से कौन सी SN1 प्रतिक्रिया तंत्र की एक प्रमुख विशेषता है? (a) यह एक-चरणीय तंत्र है। (b) यह एक कार्बोकैटायन मध्यवर्ती के निर्माण के माध्यम से आगे बढ़ता है। (c) इसके लिए एक मजबूत क्षार की आवश्यकता होती है। (d) इसकी दर सबस्ट्रेट और न्यूक्लियोकाइड दोनों पर निर्भर करती है।				
<b>Section B Answer any Two out of Two [1 x 10 = 10 Marks]</b>					
<b>Q. No.</b>	<b>QUESTIONS</b>	<b>Marks</b>	<b>COs</b>	<b>K</b>	<b>PO</b>
2	What are conjugated dienes? Explain the electrophilic addition reaction (1,2-addition and 1,4-addition) of conjugated dienes with a suitable mechanism. संयुग्मित डायन क्या है? एक उपयुक्त तंत्र के साथ संयुग्मित डायन की इलेक्ट्रोफिलिक योगात्मक प्रतिक्रिया (1,2-addition और 1,4-addition) की व्याख्या करें।	10	CO1, CO2	K2, K, K	PO1, PO2
3	Discuss elimination reactions in detail. Explain the kinetics, mechanism, and factors affecting E1 and E2 reactions. विलोपन प्रतिक्रियाओं पर विस्तार से चर्चा करें। E1 और E2 प्रतिक्रियाओं के केनेटीक्स, तंत्र और उन्हें प्रभावित करने वाले कारकों की व्याख्या करें।	10	CO1, CO3	K2, K, K	PO1, PO2
<b>Section C Answer any Two out of Three [2 x 5 = 10 Marks]</b>					
<b>Q. No.</b>	<b>QUESTIONS</b>	<b>Mark</b>	<b>COs</b>	<b>K</b>	<b>PO</b>
4	Define Saytzeff's rule (orientation) in elimination reactions and illustrate it with one simple example. विलोपन प्रतिक्रियाओं में सैटजेफ के नियम को परिभाषित करें और इसे एक सरल उदाहरण के साथ समझाएं।	5	CO1	K2	PO1
5	Draw the chemical structure and state the pharmaceutical/ industrial uses of Ethyl alcohol and Glycerol. एथिल अल्कोहल और ग्लिसरॉल की रासायनिक संरचना बनाएं और उनके दवा/औद्योगिक उपयोग बताएं।	5	CO4	K1	PO1
6	Differentiate between SN1 and SN2 reactions based on their reaction kinetics and stereochemistry. प्रतिक्रिया केनेटीक्स और स्टीरियोकेमिस्ट्री के आधार पर SN1 और SN2 प्रतिक्रियाओं के बीच अंतर स्पष्ट करें।	5	CO3	K4	PO2

CO- Course Outcomes,

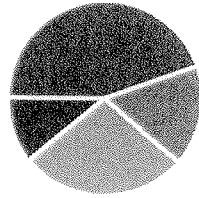
KL- Knowledge Level,

PO – Program Outcome

CO1	Create the awareness about environmental problems among learners.
CO2	Impart basic knowledge about the environment and its allied problems.
CO3	Develop an attitude of concern for the environment.
CO4	Motivate learner to participate in environment protection and environment improvement.
CO5	Acquire skills to help the concerned individuals in identifying and solving environmental problems.
CO6	Strive to attain harmony with Nature.

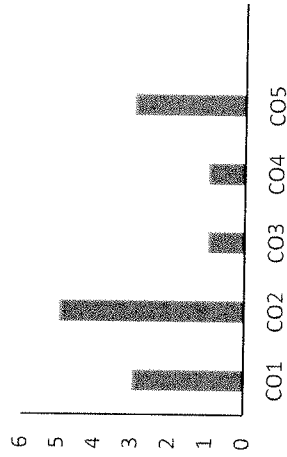
**GRAPHICAL REPRESENTATION**

Bloom's Level wise Marks Distribution



■ K1 ■ K2 ■ K3 ■ K4 ■ K5

Course outcome wise marks distribution



**ARKA JAIN University**  
Jharkhand



**2<sup>nd</sup> INTERNAL EXAMINATION**  
School of Pharmacy

Branch	B. Pharmacy	Pharmacy
Subject Name	ENVIRONMENT SCIENCE	II
		Year
		April 2026

Time: 1 Hr

- 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 come under Unfair Means and will Result in the Cancellation of the Papers.

Max. Marks : 30

Knowledge Level (KL)

K1 : Remembering

K2 : Understanding

K3 : Applying

K4 : Analysing

K5 : Evaluating

K6 : Creating



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

Q. N	QUESTIONS	Marks	COs	KL	PC
1	Discuss the concept of ecological succession. Explain primary and secondary succession with suitable examples, and analyze their ecological significance in ecosystem stability. पारिस्थितिक उत्तराधिकार (Ecological Succession) की अवधारणा पर चर्चा कीजिए। प्राथमिक एवं द्वितीयक उत्तराधिकार को उपयुक्त उदाहरणों सहित समझाइए तथा पारिस्थितिकी तंत्र की स्थिरता में उनके महत्व का विश्लेषण कीजिए।	10	CO1 CO2	K2 K4 K5	PO PO PO
2	Examine the major sources of environmental pollution (air, water, soil, and noise). Critically evaluate their health impacts and suggest integrated control strategies. पर्यावरण प्रदूषण (वायु, जल, मृदा एवं ध्वनि) के प्रमुख स्रोतों का वर्णन कीजिए। इनके स्वास्थ्य पर प्रभावों का समालोचनात्मक विश्लेषण कीजिए तथा समेकित नियंत्रण उपाय सुझाइए।	10	CO2 CO5	K2 K4 K5	PO PO PO

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

Q. No.	QUESTIONS	Marks	COs	KL	PC
3	Explain the structure and functions of an ecosystem. Discuss the role of producers, consumers, and decomposers in maintaining ecological balance. पारिस्थितिकी तंत्र (Ecosystem) की संरचना एवं कार्यों को समझाइए। उत्पादक, उपभोक्ता एवं अपघटक की भूमिका का वर्णन कीजिए।	5	CO1	K2, K4	PO1
4	Write a note on greenhouse effect and distinguish it from global warming. Discuss its environmental implications. ग्रीनहाउस प्रभाव (Greenhouse Effect) पर टिप्पणी लिखिए तथा इसे वैश्विक ऊष्मीकरण से भिन्न कीजिए। इसके पर्यावरणीय प्रभावों पर चर्चा कीजिए।	5	CO2	K2 K4	PO1 PO1
5	Explain different types of natural resources and discuss sustainable utilization practices. प्राकृतिक संसाधनों के विभिन्न प्रकारों को समझाइए तथा उनके सतत उपयोग (Sustainable Utilization) पर चर्चा कीजिए।	5	CO1	K2 K3	PO1

6	Discuss the sources, effects, and control measures of soil pollution. मृदा प्रदूषण (Soil Pollution) के स्रोत, प्रभाव एवं नियंत्रण उपायों पर चर्चा कीजिए।	5	CO2 CO5	K2 K3	PO1, PO2 PO3
7	Explain the concept of sustainable development. Discuss its principles and importance in environmental protection. सतत विकास (Sustainable Development) की अवधारणा को समझाइए। इसके सिद्धांतों एवं पर्यावरण संरक्षण में इसके महत्व पर चर्चा कीजिए।	5	CO3 CO4	K2 K3	PO1
8	Discuss the concept of carrying capacity of an ecosystem. Explain the factors that influence it and its significance in environmental management. पारिस्थितिकी तंत्र की वहन क्षमता (Carrying Capacity) की अवधारणा पर चर्चा कीजिए। इसे प्रभावित करने वाले कारक एवं पर्यावरण प्रबंधन में इसके महत्व को समझाइए।	5	CO2 CO5	K2 K4	PO1, PO2

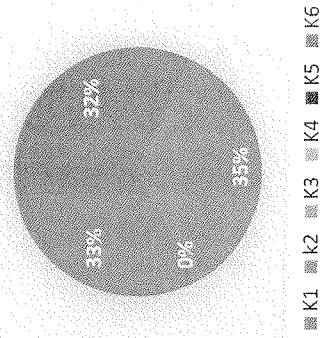
	<b>ARKA JAIN University</b> Jharkhand		<b>2<sup>nd</sup> INTERNAL EXAMINATION</b> School of Pharmacy	
			Branch B. Pharmacy	Program Pharmacy
Subject Name Human Anatomy & Physiology- II (Theory)		Semester II		
Time: 1 Hour Max. Marks: 30		Year April 2026		
• Answer all Questions of Section A (Compulsory) • Answer Any <i>One</i> out of <i>Two</i> of Section B • Answer Any <i>Two</i> out of <i>Three</i> of Section C • Possession of <u>Mobile Phones</u> or any kind of <u>Written Material, Arguments with the Invigilator or Discussing with Co-Student</u> will come under <u>Unfair Means</u> and will <u>Result in the Cancellation of the Papers.</u>				
Knowledge Level (KL)		K3 : Applying K5 : Evaluating		
		K2 : Understanding K4 : Analysing K6 : Creating		

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

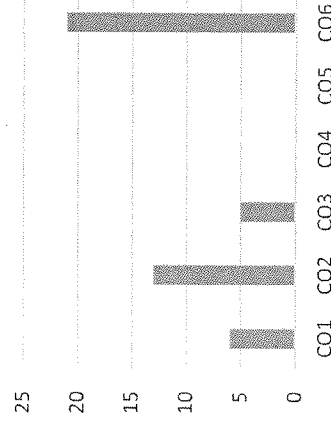
CO1	Understand the gross morphology, structure and functions of various organs of the human body.
CO2	Understand the various homeostatic mechanisms and their imbalances
CO3	Remember the various tissues and organs of different systems of human body.
CO4	Apply the hematological tests like blood cell counts, haemoglobin estimation, bleeding/clotting time etc and record blood pressure, heart rate, pulse and respiratory volume
CO5	Evaluate coordinated working pattern of different organs of each system
CO6	Analyze the interlinked mechanisms in the maintenance of normal functioning (Homeostasis) of human body.

**GRAPHICAL REPRESENTATION**

**Bloom's Level wise Marks Distribution**



**Course Outcome Wise Marks Distribution**



Section A (Each question Carry 01 Marks from Q1-i to Q1-x) – 10 Marks					
Q.N1	QUESTIONS	Marks	COs	KL	PO
i	The process of conversion of complex food substances into simple absorbable forms _____ A. Digestion B. Excretion C. Respiration D. Circulation जटिल खाद्य पदार्थों को सरल, अवशोषक रूपों में परिवर्तित करने की प्रक्रिया _____ A. पाचन B. उत्सर्जन C. श्वसन D. परिसंचरण	1	CO2 K1	K1	PO1
ii	Which portion of stomach opens into small intestine? A. Cardia B. Fundus C. Pyloric D. Body पेट का कौन सा भाग छोटी अंत में खुलता है? A. कार्डिया B. फंडस C. पाइलोरिक D. बॉडी	1	CO1 K2	K2	PO2
iii	The hard chewing surface of the teeth is _____ A. Enamel B. Tongue C. Frenulum D. Papillae दांतों की कठोर चबाने वाली सतह _____ होती है A. इनेमल B. जीभ C. फ्रेंजुलम D. पैपिला	1	CO1 K1	K1	PO1
iv	Pepsinogens are secreted by which cell A. Parietal cell B. Mucus cell C. Chief cells D. None पेप्सिनोजेन किस कोशिका द्वारा सावित होते हैं? A. पार्श्विका कोशिका B. श्लेष्मा कोशिका C. मुख्य कोशिकाएँ D. कोई नहीं	1	CO2 K2	K2	PO10

v	PH of the stomach is _____ A.5.5-6.5 B.7 C.3.5-4.5 D.1.5-3.5 पेट का pH मान _____ है A. 5.5-6.5 B. 7 C. 3.5-4.5 D. 1.5-3.5	1	CO6	K1	PO2
vi	At which thoracic vertebrae do the trachea branch? A. Sixth B. Fourth C. Fifth D. Second श्वसनली किस वक्षीय कशेरुका पर शाखाओं में बँटती है? A. छठी B. चौथी C. पाँचवीं D. दूसरी	1	CO1	K1	PO10
vii	Pleura is _____ layered. A. Single B. Double C. Triple D. None प्लीयूरा _____ स्तरित होता है। A. एकल B. दोहरा C. तिररा D. कोई नहीं	1	CO2	K2	PO2
viii	Which of the following is not a characteristic of alveoli? A. Thick B. Thin C. Irregular walled D. Vascularized निम्नलिखित में से कौन सी एल्विओली की विशेषता नहीं है? A. मोटी B. पतली C. अनियमित दीवार वाली D. संवहनीकृत	1	CO1	K2	PO10
ix	The glomerulus located within which part of nephron? A. PCT B. DCT C. Loop of Henle D. Bowman's capsule नेफ्रॉन के किस भाग में ग्लोमेरुलस स्थित होता है? A. पीसीटी B. डीसीटी C. हेनले का लूप D. बोमन कैप्सूल	1	CO1	K2	PO2
x	How many layers of glomerular epithelium are involved in the filtration of blood? A.1 B.2 C.3 D.4 रक्त के निस्पंदन में ग्लोमेरुलर उपकला की कितनी परतें शामिल होती हैं? A.1 B.2 C.3 D.4	1	CO1	K2	PO2

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

Q. No.	QUESTIONS	Marks	COs	KL	PO
2	Draw a neat and clean labelled diagram of Alimentary canal and Briefly Describe about HCL secretion in stomach. आहार नाल का एक साफ-सुथरा और सुव्यवस्थित आरेख बनाएं और पेट में एचसीएल स्राव के बारे में संक्षेप में वर्णन करें।	10	CO6	K6	PO10
3	Draw a neat and clean labelled diagram of urinary system and explain the physiology of urine formation. मूत्र प्रणाली का एक साफ-सुथरा और स्पष्ट आरेख बनाएं और मूत्र निर्माण की क्रियाविधि को समझाएं।	10	CO6	K6	PO10

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

Q. No.	QUESTIONS	Marks	COs	KL	PO
4	Write short notes on liver and pancreas.	5	CO3	K1	PO10

	यकृत और अग्न्याशय पर संक्षिप्त नोट्स लिखिए।			K2	
5	Explain the physiology of respiration. श्वसन की क्रियाविधि को समझाइए।	5	CO2	K1	PO10
6	Briefly describe about Role of pepsin in protein digestion. प्रोटीन के पाचन में पेप्सिन की भूमिका का संक्षेप में वर्णन कीजिए।	5	CO2	K1	PO10
				K2	

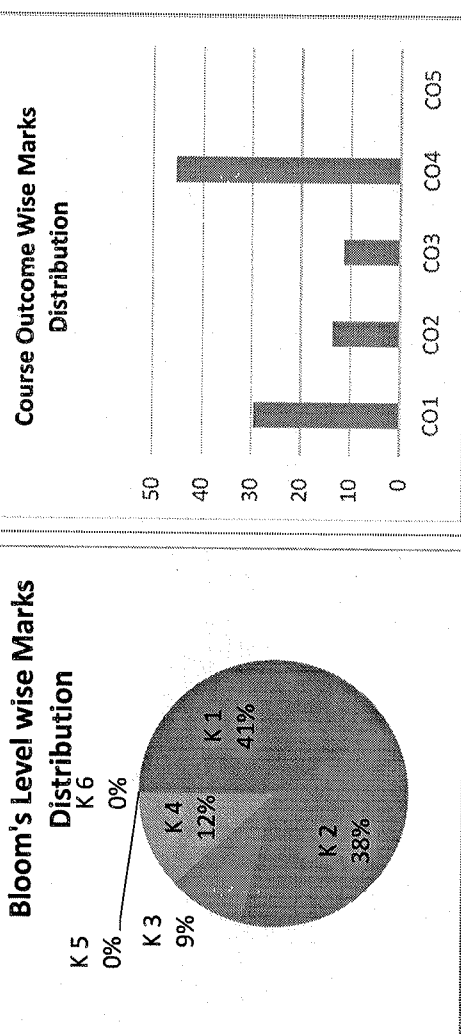
Branch	B. Pharmacy	Program	Pharmacy
Subject Name	Pathophysiology (Theory)		
		Semester	II
		Year	April 2026
Time: 1 Hour Max. Marks : 30	<ul style="list-style-type: none"> <li>Answer all Questions of Section A (Compulsory)</li> <li>Answer Any One out of Two of Section B</li> <li>Answer Any Two out of Three of Section C</li> <li>Possession of Mobile Phones or any kind of Written Material, Arguments with the Invigilator or Discussing with Co-Student will come under Unfair Means and will Result in the Cancellation of the Papers.</li> </ul>		

Knowledge Level (KL)	K1: Remembering K2: Understanding	K3: Applying K4: Analysing	K5: Evaluating K6: Creating
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Section A (Each question Carry 01 Marks from Q1-i to Q1-x) - 10 Marks			
Q. N1	QUESTIONS	Marks	COs KL PO
i	Asthma is primarily a: A. Restrictive lung disease B. Obstructive lung disease C. Infectious disease अस्थमा मुख्यतः एक: A. प्रतिबंधात्मक फेफड़े का रोग B. अवरोधक फेफड़े का रोग C. संक्रामक रोग D. आनुवंशिक विकार	1	CO2 KL, PO1C K2
ii	Which drug is used for acute asthma attack? A. Salmeterol B. Beclomethasone C. Salbutamol D. Montelukast अस्थमा के तीव्र दौरे के लिए कौन सी दवा का प्रयोग किया जाता है? A. सैलमेटेरोल B. बेक्लोमेथासोन C. सेल्युटामील D. मोंटेलुकास्ट	1	CO2 KL, PO2 K2
iii	Iron deficiency anaemia shows: A. Macrocytic cells B. Microcytic hypochromic cells C. Normocytic cells D. Sickle cells आयरन की कमी से होने वाले एनीमिया में क्या दिखाता है: A. मैक्रोसाइटिक कोशिकाएं B. माइक्रोसाइटिक हाइपोक्रोमिक कोशिकाएं C. नॉर्मोसाइटिक कोशिकाएं D. सिकल कोशिकाएं	1	CO1 KL, PO1 K2
iv	Hyperuricemia means: A. Low uric acid B. High uric acid C. Low glucose D. High calcium हाइपरयूरिसेमिया का अर्थ है: A. कम यूरिक एसिड B. उच्च यूरिक एसिड C. कम ग्लूकोज D. उच्च कैल्शियम	1	CO2 K1 PO1

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

CO1	Describe the aetiology and basics of pathophysiology
CO2	Acquire knowledge of signs and symptoms of the diseases
CO3	Identify the complications of the diseases
CO4	Know about most commonly encountered pathophysiological state(s) and/or disease mechanism(s), as well as any clinical testing requirement
CO5	Describe Basic principles of Cell injury Adaptation and explain the concept of inflammation and repair



v	Asthma is characterized by: A. Irreversible airway obstruction B. Reversible airway obstruction C. No inflammation D. Alveolar destruction अस्थमा की विशेषताएँ हैं: A. अपरिवर्तनीय वायुमार्ग अवरोध B. परिवर्तनीय वायुमार्ग अवरोध C. सूजन का अभाव D. एल्वियोलर क्षति	1	CO1	K1, K2	PO2
vi	Which amino acid replaces glutamic acid in sickle cell anaemia? A. Glycine B. Valine C. Leucine D. Alanine सिकल सेल एनीमिया में ग्लूटामिक एसिड की जगह कौन सा अमीनो एसिड लेता है? A. ग्लाइसिन B. वैलीन C. ल्यूसीन D. एलानिन	1	CO2	K1	PO1, PO2
vii	COPD includes: A. Asthma + Pneumonia B. Chronic bronchitis + Emphysema C. Tuberculosis + Asthma D. Bronchiectasis only सीओपीडी में शामिल है: A. अस्थमा + निमोनिया B. क्रोनिक ब्रोंकाइटिस + एम्फीसेमा C. तपेटिक + अस्थमा D. केवल ब्रोंकिएक्टिसिस	1	CO2	K1, K2	PO1, PO2
viii	Vitamin B12 deficiency causes: A. Iron deficiency anaemia B. Hemolytic anaemia C. Megaloblastic anaemia D. Aplastic anaemia विटामिन बी१२ की कमी से निम्नलिखित रोग होते हैं: A. अयरन की कमी से होने वाला एनीमिया B. हीमोलिटिक एनीमिया C. मेगालोब्लास्टिक एनीमिया D. एप्लास्टिक एनीमिया	1	CO1	K1, K2	PO1
ix	Gout is caused by deposition of: A. Calcium crystals B. Uric acid crystals C. Cholesterol D. Glucose गाउट निम्न के जमाव के कारण होता है: A. कैल्शियम क्रिस्टल B. यूरिक एसिड क्रिस्टल C. कोलेस्ट्रॉल D. ग्लूकोज	1	CO2	K1	PO2
x	In chronic bronchitis, productive cough persists for: A. 1 month B. 3 months for 2 consecutive years C. 6 months D. 1 year only क्रोनिक ब्रोंकाइटिस में, बलगम वाली खांसी कितने समय तक बनी रहती है? A. 1 महीना	1	CO4	K1, K2	PO1

- B. लगातार 2 वर्षों तक 3 महीने  
C. 6 महीने  
D. केवल 1 वर्ष

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

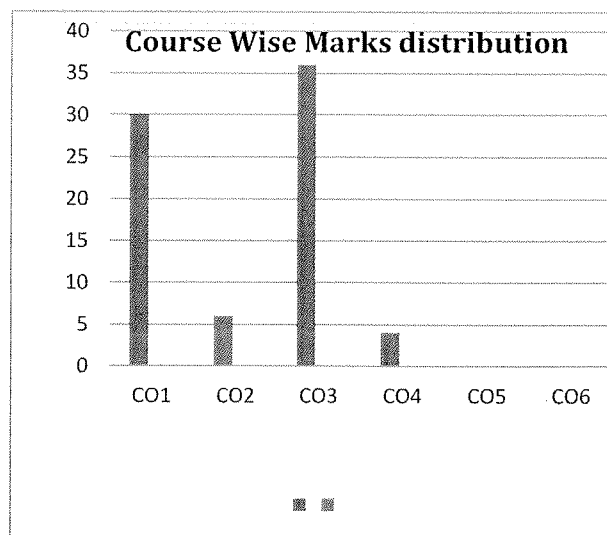
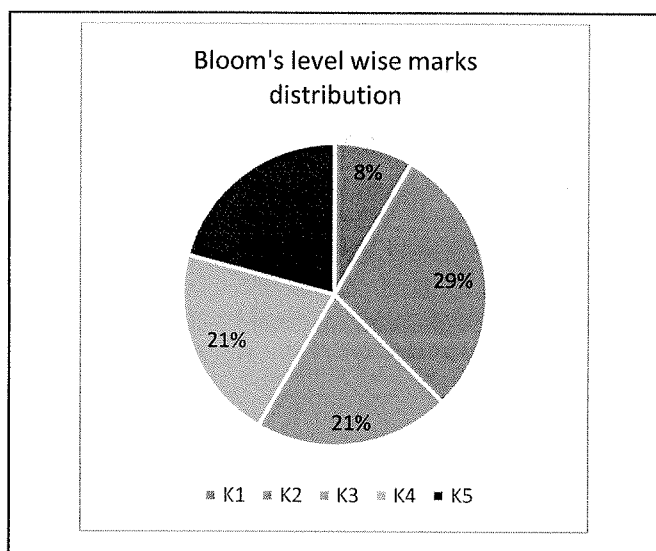
Q. No.	QUESTIONS	Marks	COs	KL	PO
2	Define Iron Deficiency Anaemia. Discuss in detail its etiology, pathophysiology, clinical features, diagnosis, and management. अयरन की कमी से होने वाले एनीमिया को परिभाषित करें। इसके कारण, रोगक्रिया, नैदानिक लक्षण, निदान और प्रबंधन पर विस्तार से चर्चा करें।	10	CO4	K2, K4	PO10
3	Define Asthma. Explain in detail its etiology, pathophysiology, clinical features, diagnosis, and management. अस्थमा को परिभाषित करें। इसके कारण, रोगक्रिया, नैदानिक लक्षण, निदान और प्रबंधन की विस्तृत व्याख्या करें।	10	CO4	K2, K3, K4	PO10




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

Q. No.	QUESTIONS	Marks	COs	KL	PO
4	Explain the pathophysiology of gout disease. गाउट रोग की रोगक्रियाविज्ञान की व्याख्या कीजिए।	5	CO1	K1, K2	PO1, PO2
5	Explain the causes and clinical features of Acute and Chronic Renal Failure. तीव्र और दीर्घकालिक गुर्दे की विफलता के कारणों और नैदानिक लक्षणों की व्याख्या कीजिए।	5	CO3	K2, K4	PO2
6	Explain the pathophysiology of Peptic ulcer. पेटिक अल्सर की रोगक्रियाविज्ञान की व्याख्या कीजिए।	5	CO1	K1, K2	PO1, PO2

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

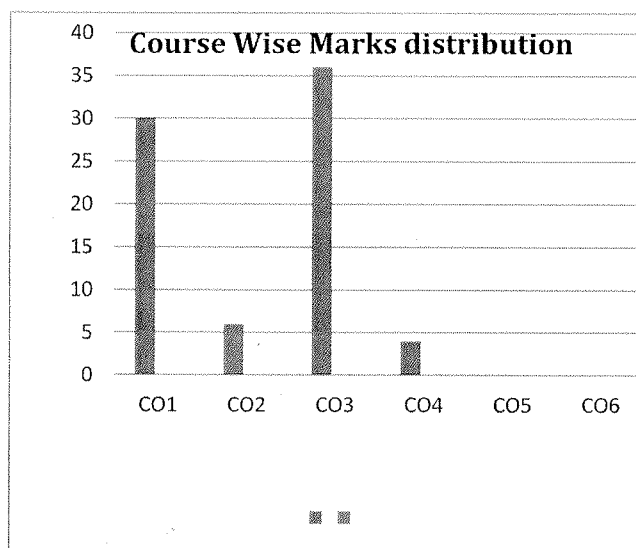
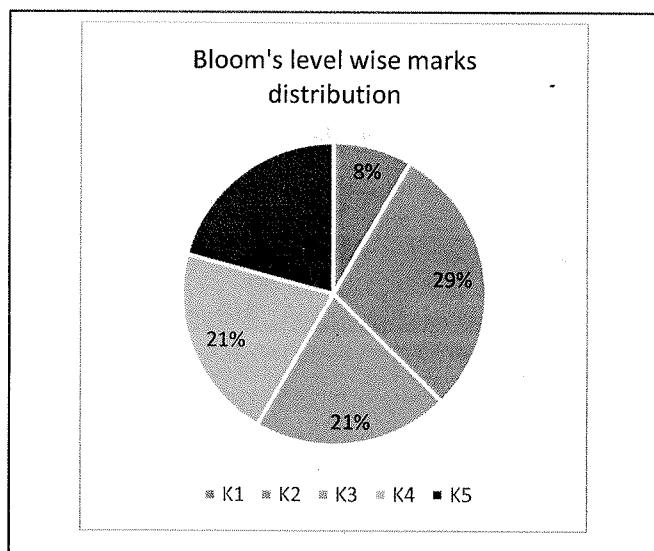
Course Outcomes	CO1	Understand the basic principles of protein and polysaccharide structure
	CO2	Remember qualitative and quantitative estimation of the biological macromolecules
	CO3	Apply emanating from a clinical test lab
	CO4	Understand how physiological conditions influence the structures and re-activities of biomolecules.
	CO5	Remember chemistry and biological importance of biological macromolecules.




<b>SCHOOL OF PHARMACY</b>	  			<b>2<sup>nd</sup> INTERNAL EXAMINATION</b>		
Program Name	<b>BACHELOR OF PHARMACY</b>	Program Code	<b>B. PHARM</b>			
Course Name	<b>Biochemistry (Practical)</b>	Semester	<b>2nd Semester (Group-D)</b>			
Course Code	<b>PHM22021</b>	Year	<b>April 2026</b>			
Time: 4 Hours	<b>All the Questions are Compulsory</b>	Maximum Marks	<b>40</b>			
Knowledge Level (KL)	<b>K1 : Remembering</b>	<b>K3 : Applying</b>	<b>K5 : Evaluating</b>			
	<b>K2 : Understanding</b>	<b>K4 : Analysing</b>	<b>K6 : Creating</b>			
<b>Section A</b>						
<b>[1 x 10 = 10 Marks]</b>						
<b>Q. No.</b>	<b>Questions</b>	<b>Marks</b>	<b>COs</b>	<b>KL</b>	<b>PO</b>	
<b>I</b>	<b>Synopsis</b> Write the synopsis on the citric acid cycle.	<b>10</b>	<b>CO2</b>	<b>K1,K2</b>	<b>PO1</b>	
<b>Section B</b>						
<b>[15 + 10=25 Marks]</b>						
<b>Q. No.</b>	<b>Questions</b>	<b>Marks</b>	<b>COs</b>	<b>KL</b>	<b>PO</b>	
<b>II</b>	a. Major Experiment Perform an experiment to study the effects of difference in temperature on activity of salivary amylase.	<b>15</b>	<b>CO3</b>	<b>K3,K4,K5</b>	<b>PO1</b>	
	b. Minor Experiment Perform an experiment for the identification test of protein sample.	<b>10</b>	<b>CO6</b>	<b>K3,K4,K5</b>	<b>PO1</b>	
<b>Section C</b>						
<b>[05 Marks]</b>						
<b>Q. No.</b>	<b>Questions</b>	<b>Marks</b>	<b>COs</b>	<b>KL</b>	<b>PO</b>	
<b>III</b>	Viva voce	<b>05</b>				

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

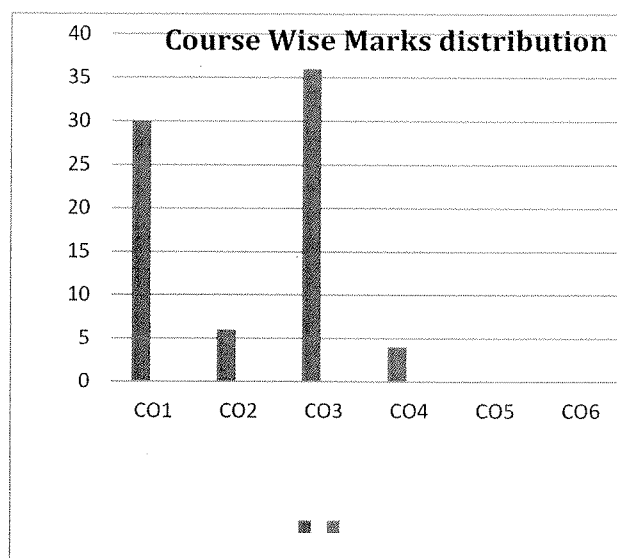
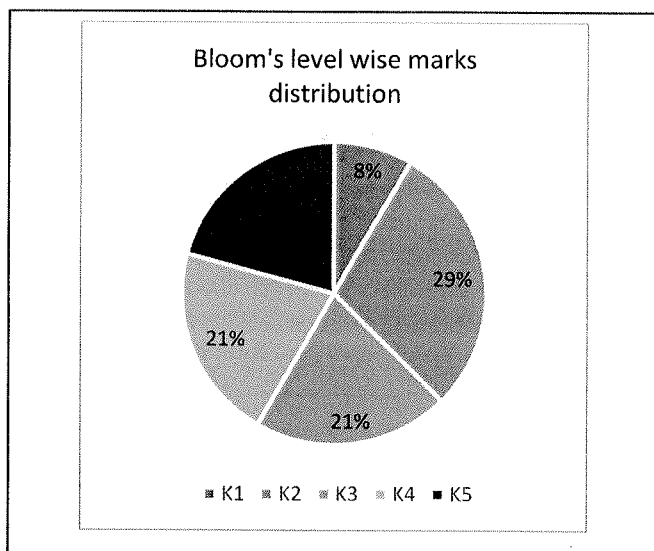
Course Outcomes	CO1	Understand the basic principles of protein and polysaccharide structure
	CO2	Remember qualitative and quantitative estimation of the biological macromolecules
	CO3	Apply emanating from a clinical test lab
	CO4	Understand how physiological conditions influence the structures and re-activities of biomolecules.
	CO5	Remember chemistry and biological importance of biological macromolecules.




SCHOOL OF PHARMACY				2 <sup>nd</sup> INTERNAL EXAMINATION	
	Program Name	BACHELOR OF PHARMACY	Program Code		
Course Name	Biochemistry (Practical)	Semester	2nd Semester (Group-C)		
Course Code	PHM22021	Year	April 2026		
Time: 4 Hours	All the Questions are Compulsory	Maximum Marks	40		
Knowledge Level (KL)	K1 : Remembering	K3 : Applying	K5 : Evaluating		
	K2 : Understanding	K4 : Analysing	K6 : Creating		
<b>Section A</b>					
<b>[1 x 10 = 10 Marks]</b>					
Q. No.	Questions	Marks	COs	KL	PO
I	<b>Synopsis</b> Write the synopsis on citric acid cycle.	10	CO2	K1	PO1
<b>Section B</b>					
<b>[15 + 10=25 Marks]</b>					
Q. No.	Questions	Marks	COs	KL	PO
II	a. Major Experiment Perform an experiment to study the effects of difference in temperature on activity of salivary amylase.	15	CO3	K1, K2	PO1
	b. Minor Experiment Perform an experiment for the qualitative analysis for carbohydrate sample.	10	CO6	K1, K2	PO1
<b>Section C</b>					
<b>[05 Marks]</b>					
Q. No.	Questions	Marks	COs	KL	PO
III	Viva voce	05			

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

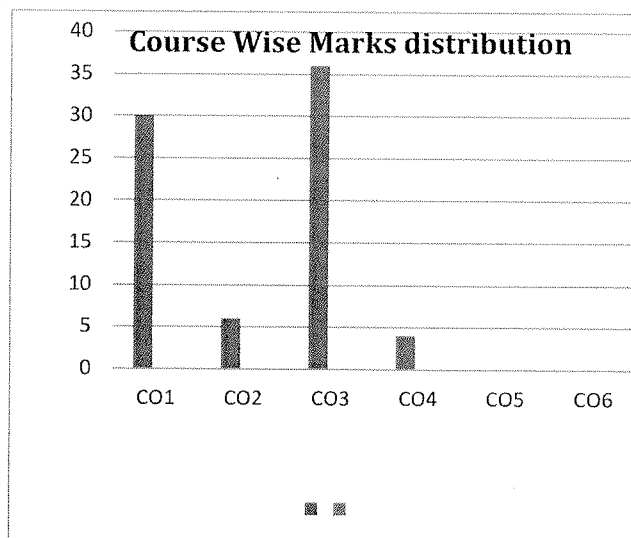
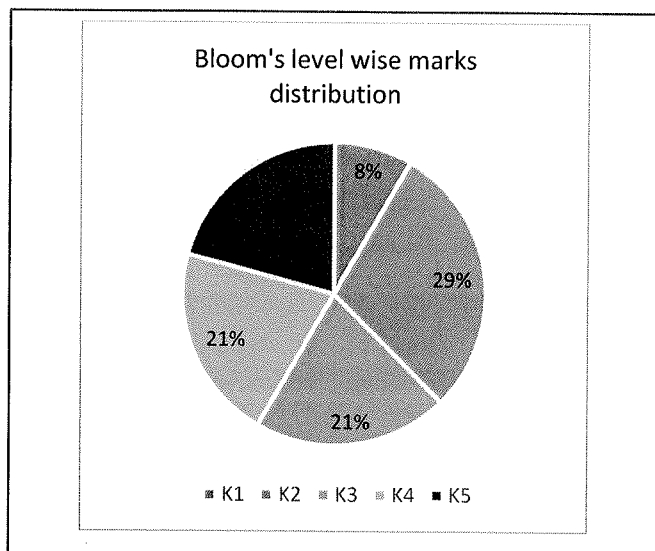
Course Outcomes	CO1	Understand the basic principles of protein and polysaccharide structure
	CO2	Remember qualitative and quantitative estimation of the biological macromolecules
	CO3	Apply emanating from a clinical test lab
	CO4	Understand how physiological conditions influence the structures and re-activities of biomolecules.
	CO5	Remember chemistry and biological importance of biological macromolecules.




SCHOOL OF PHARMACY				2 <sup>nd</sup> INTERNAL EXAMINATION	
	Program Name	<b>BACHELOR OF PHARMACY</b>	Program Code	<b>B. PHARM</b>	
Course Name	<b>Biochemistry (Practical)</b>	Semester	<b>2nd Semester (Group-B)</b>		
Course Code	PHM22021	Year	<b>April 2026</b>		
Time: 4 Hours	<b>All the Questions are Compulsory</b>	Maximum Marks	<b>40</b>		
Knowledge Level (KL)	<b>K1 : Remembering</b>	<b>K3 : Applying</b>	<b>K5 : Evaluating</b>		
	<b>K2 : Understanding</b>	<b>K4 : Analysing</b>	<b>K6 : Creating</b>		
<b>Section A</b>					
<b>[1 x 10 = 10 Marks]</b>					
<b>Q. No.</b>	<b>Questions</b>	<b>Marks</b>	<b>COs</b>	<b>KL</b>	<b>PO</b>
<b>I</b>	<b>Synopsis</b> Write the synopsis on electron transport chain and oxidative Phosphorylation.	<b>10</b>	<b>CO2</b>	<b>K1,K2</b>	<b>PO1</b>
<b>Section B</b>					
<b>[15 + 10=25 Marks]</b>					
<b>Q. No.</b>	<b>Questions</b>	<b>Marks</b>	<b>COs</b>	<b>KL</b>	<b>PO</b>
<b>II</b>	a. Major Experiment Perform an experiment to perform qualitative analysis of urine for abnormal constituents.	<b>15</b>	<b>CO3</b>	<b>K3, K4,K5</b>	<b>PO1</b>
	b. Minor Experiment Perform an experiment to study the qualitative analysis of given carbohydrate sample.	<b>10</b>	<b>CO6</b>	<b>K3,K4,K5</b>	<b>PO1</b>
<b>Section C</b>					
<b>[05 Marks]</b>					
<b>Q. No.</b>	<b>Questions</b>	<b>Marks</b>	<b>COs</b>	<b>KL</b>	<b>PO</b>
<b>III</b>	Viva voce	<b>05</b>			

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

Course Outcomes	CO1	Understand the basic principles of protein and polysaccharide structure
	CO2	Remember qualitative and quantitative estimation of the biological macromolecules.
	CO3	Apply emanating from a clinical test lab.
	CO4	Understand how physiological conditions influence the structures and re-activities of biomolecules.
	CO5	Remember chemistry and biological importance of biological macromolecules.

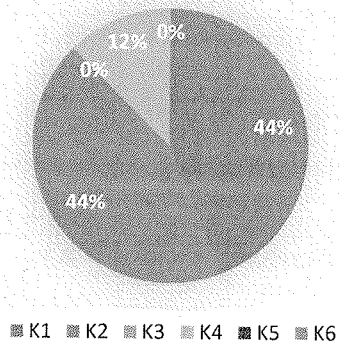


<b>SCHOOL OF PHARMACY</b>				<b>2<sup>nd</sup> INTERNAL EXAMINATION</b>	
Program Name	<b>BACHELOR OF PHARMACY</b>	Program Code	<b>B. PHARM</b>		
Course Name	<b>Biochemistry (Practical)</b>	Semester	<b>2nd Semester (Group-A)</b>		
Course Code	<b>PHM22021</b>	Year	<b>April 2026</b>		
Time: 4 Hours	<b>All the Questions are Compulsory</b>	Maximum Marks	<b>40</b>		
Knowledge Level (KL)	<b>K1 : Remembering</b>	<b>K3 : Applying</b>	<b>K5 : Evaluating</b>		
	<b>K2 : Understanding</b>	<b>K4 : Analysing</b>	<b>K6 : Creating</b>		
<b>Section A</b>					
<b>[1 x 10 = 10 Marks]</b>					
<b>Q. No.</b>	<b>Questions</b>	<b>Marks</b>	<b>COs</b>	<b>KL</b>	<b>PO</b>
<b>I</b>	<b>Synopsis</b> Write the synopsis on glycolysis pathway.	<b>10</b>	<b>CO2</b>	<b>K1,k2</b>	<b>PO1</b>
<b>Section B</b>					
<b>[15 + 10=25 Marks]</b>					
<b>Q. No.</b>	<b>Questions</b>	<b>Marks</b>	<b>COs</b>	<b>KL</b>	<b>PO</b>
<b>II</b>	a. Major Experiment Perform an experiment to study the effects of Different temperature on activity of salivary amylase.	<b>15</b>	<b>CO3</b>	<b>K4,K5,K6</b>	<b>PO1</b>
	b. Minor Experiment Perform an experiment for identification of protein sample.		<b>CO4</b>	<b>K3,K4,K5</b>	<b>PO1</b>
<b>Section C</b>					
<b>[05 Marks]</b>					
<b>Q. No.</b>	<b>Questions</b>	<b>Marks</b>	<b>COs</b>	<b>KL</b>	<b>PO</b>
<b>III</b>	Viva voce	<b>05</b>			

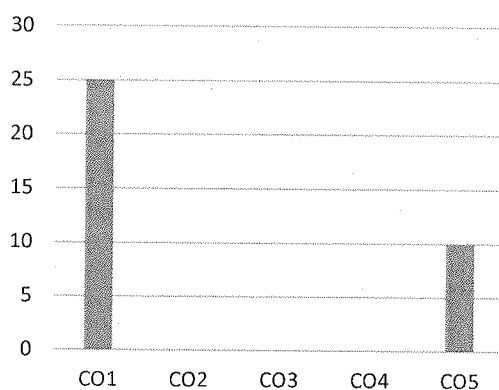
CO- Course Outcomes, KL- Knowledge Level, PO – Program Outcome



Course Outcomes	CO1	Understand the gross morphology, structure and functions of various organs of the human body.
	CO2	Understand the various homeostatic mechanisms and their imbalances.
	CO3	Remember the various tissues and organs of different systems of human body.
	CO4	Apply the hematological tests like blood cell counts, haemoglobin estimation, bleeding/clotting time etc and record blood pressure, heart rate, pulse and respiratory volume
	CO5	Apply the experiments like Olfaction, gustation reflex and eyesight.

### Bloom's Level wise Marks Distribution



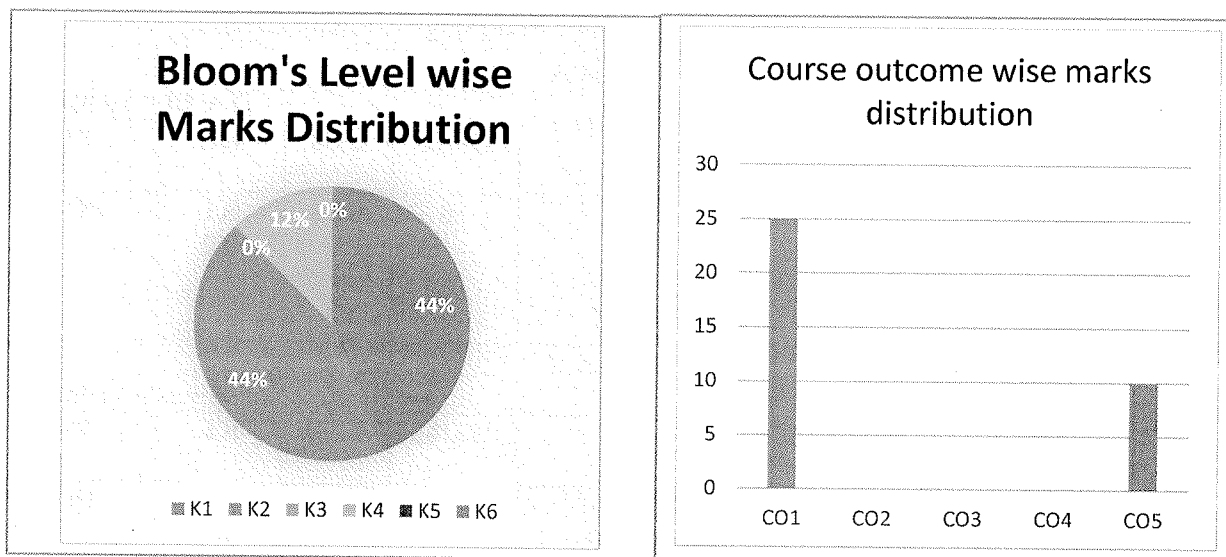
### Course outcome wise marks distribution





<b>SCHOOL OF PHARMACY</b>		 <b>ARKA JAIN University</b> Jharkhand 		<b>2<sup>nd</sup> INTERNAL EXAMINATION</b>		
Program Name	<b>BACHELOR OF PHARMACY</b>	Program Code	<b>B. PHARM</b>			
Course Name	<b>Human Anatomy &amp; Physiology-II (Practical)</b>	Semester	<b>2<sup>nd</sup> Semester (Group-D)</b>			
Course Code	<b>PHM22020</b>	Year	<b>April 2026</b>			
Time: 4 Hours	<b>All the Questions are Compulsory</b>	Maximum Marks	<b>40</b>			
Knowledge Level (KL)	<b>K1 : Remembering</b>	<b>K3 : Applying</b>	<b>K5 : Evaluating</b>			
	<b>K2 : Understanding</b>	<b>K4 : Analysing</b>	<b>K6 : Creating</b>			
<b>Section A</b>						
<b>[1 x 10 = 10 Marks]</b>						
<b>Q. No.</b>	<b>Questions</b>	<b>Marks</b>	<b>COs</b>	<b>KL</b>	<b>PO</b>	
<b>I</b>	Synopsis Write synopsis on kidney. सारांश- गुर्दे पर संक्षिप्त विवरण लिखिए।	<b>10</b>	<b>CO1</b>	<b>K1 K2</b>	<b>PO10</b>	
<b>Section B</b>						
<b>[15 + 10=25 Marks]</b>						
<b>Q. No.</b>	<b>Questions</b>	<b>Marks</b>	<b>COs</b>	<b>KL</b>	<b>PO</b>	
<b>II</b>	a. Major Experiment Identify the supplied model and describe it briefly. a. प्रमुख प्रयोग- दिए गए मॉडल की पहचान करें और उसका संक्षिप्त विवरण दें।	<b>15</b>	<b>CO1</b>	<b>K1 K2</b>	<b>PO2</b>	
	b. Minor Experiment Perform an experiment to determine the body temperature. b. लघु प्रयोग- शरीर का तापमान निर्धारित करने के लिए एक प्रयोग करें।	<b>10</b>	<b>CO5</b>	<b>K1 K2 K4</b>	<b>PO2</b>	
<b>Section C</b>						
<b>[05 Marks]</b>						
<b>Q. No.</b>	<b>Questions</b>	<b>Marks</b>	<b>COs</b>	<b>KL</b>	<b>PO</b>	
<b>III</b>	Viva voce मौखिक	<b>05</b>				

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

Course Outcomes	CO1	Understand the gross morphology, structure and functions of various organs of the human body.
	CO2	Understand the various homeostatic mechanisms and their imbalances.
	CO3	Remember the various tissues and organs of different systems of human body.
	CO4	Apply the hematological tests like blood cell counts, haemoglobin estimation, bleeding/clotting time etc and record blood pressure, heart rate, pulse and respiratory volume
	CO5	Apply the experiments like Olfaction, gustation reflex and eyesight.

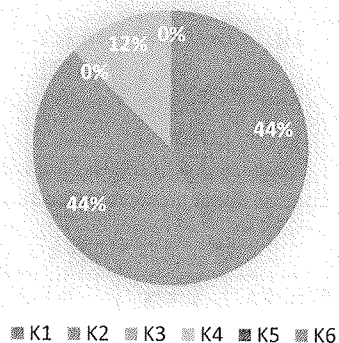


<b>SCHOOL OF PHARMACY</b>		 <b>ARKA JAIN University</b> Jharkhand 		<b>2<sup>nd</sup> INTERNAL EXAMINATION</b>		
Program Name	<b>BACHELOR OF PHARMACY</b>	Program Code	<b>B. PHARM</b>			
Course Name	<b>Human Anatomy &amp; Physiology-II (Practical)</b>	Semester	<b>2<sup>nd</sup> Semester (Group-C)</b>			
Course Code	<b>PHM22020</b>	Year	<b>April 2026</b>			
Time: 4 Hours	<b>All the Questions are Compulsory</b>	Maximum Marks	<b>40</b>			
Knowledge Level (KL)	<b>K1 : Remembering</b>	<b>K3 : Applying</b>	<b>K5 : Evaluating</b>			
	<b>K2 : Understanding</b>	<b>K4 : Analysing</b>	<b>K6 : Creating</b>			
<b>Section A</b>						
<b>[1 x 10 = 10 Marks]</b>						
<b>Q. No.</b>	<b>Questions</b>	<b>Marks</b>	<b>COs</b>	<b>KL</b>	<b>PO</b>	
<b>I</b>	Synopsis Write synopsis on tongue. सारांश- जीभ पर सारांश लिखें।	<b>10</b>	<b>CO1</b>	<b>K1 K2</b>	<b>PO10</b>	
<b>Section B</b>						
<b>[15 + 10=25 Marks]</b>						
<b>Q. No.</b>	<b>Questions</b>	<b>Marks</b>	<b>COs</b>	<b>KL</b>	<b>PO</b>	
<b>II</b>	a. Major Experiment Identify the supplied model and describe it briefly. a. प्रमुख प्रयोग- दिए गए मॉडल की पहचान करें और उसका संक्षिप्त विवरण दें।	<b>15</b>	<b>CO1</b>	<b>K1 K2</b>	<b>PO2</b>	
	b. Minor Experiment Perform an experiment on reflex activity. b. लघु प्रयोग- प्रतिवर्ती क्रिया पर एक प्रयोग कीजिए।	<b>10</b>	<b>CO5</b>	<b>K1 K2 K4</b>	<b>PO2</b>	
<b>Section C</b>						
<b>[05 Marks]</b>						
<b>Q. No.</b>	<b>Questions</b>	<b>Marks</b>	<b>COs</b>	<b>KL</b>	<b>PO</b>	
<b>III</b>	Viva voce मौखिक	<b>05</b>				

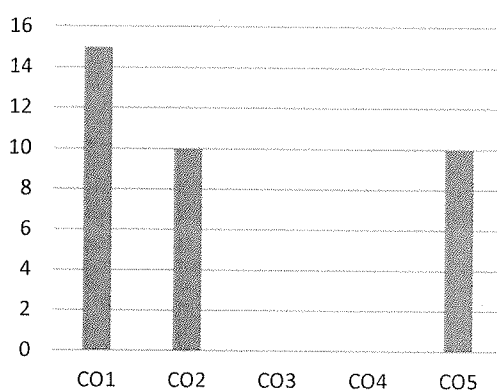
CO- Course Outcomes, KL- Knowledge Level, PO – Program Outcome



Course Outcomes	CO1	Understand the gross morphology, structure and functions of various organs of the human body.
	CO2	Understand the various homeostatic mechanisms and their imbalances.
	CO3	Remember the various tissues and organs of different systems of human body.
	CO4	Apply the hematological tests like blood cell counts, haemoglobin estimation, bleeding/clotting time etc and record blood pressure, heart rate, pulse and respiratory volume
	CO5	Apply the experiments like Olfaction, gustation reflex and eyesight.

### Bloom's Level wise Marks Distribution



### Course outcome wise marks distribution

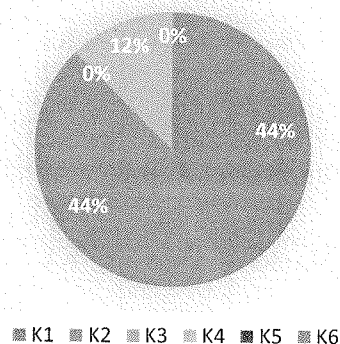


<b>SCHOOL OF PHARMACY</b>		 <b>ARKA JAIN University</b> Jharkhand				<b>2<sup>nd</sup> INTERNAL EXAMINATION</b>	
Program Name	<b>BACHELOR OF PHARMACY</b>	Program Code	<b>B. PHARM</b>				
Course Name	<b>Human Anatomy &amp; Physiology-II (Practical)</b>	Semester	<b>2<sup>nd</sup> Semester (Group-B)</b>				
Course Code	<b>PHM22020</b>	Year	<b>April 2026</b>				
Time: 4 Hours	<b>All the Questions are Compulsory</b>	Maximum Marks	<b>40</b>				
Knowledge Level (KL)	<b>K1 : Remembering</b>	<b>K3 : Applying</b>	<b>K5 : Evaluating</b>				
	<b>K2 : Understanding</b>	<b>K4 : Analysing</b>	<b>K6 : Creating</b>				
<b>Section A</b>							
<b>[1 x 10 = 10 Marks]</b>							
<b>Q. No.</b>	<b>Questions</b>	<b>Marks</b>	<b>COs</b>	<b>KL</b>	<b>PO</b>		
<b>I</b>	Synopsis Write synopsis on different lung capacities. सारांश- फेफड़ों की विभिन्न क्षमताओं पर एक संक्षिप्त विवरण लिखिए।	<b>10</b>	<b>CO2</b>	<b>K1 K2</b>	<b>PO10</b>		
<b>Section B</b>							
<b>[15 + 10=25 Marks]</b>							
<b>Q. No.</b>	<b>Questions</b>	<b>Marks</b>	<b>COs</b>	<b>KL</b>	<b>PO</b>		
<b>II</b>	a. Major Experiment Perform an experiment on general neurological examination. a. प्रमुख प्रयोग- सामान्य तंत्रिका संबंधी परीक्षण पर एक प्रयोग करें।	<b>15</b>	<b>CO1</b>	<b>K1 K2</b>	<b>PO2</b>		
	b. Minor Experiment Perform an experiment to determine different types of tastes. b. लघु प्रयोग- विभिन्न प्रकार के स्वादों का पता लगाने के लिए एक प्रयोग करें।	<b>10</b>	<b>CO5</b>	<b>K1 K2 K4</b>	<b>PO2</b>		
<b>Section C</b>							
<b>[05 Marks]</b>							
<b>Q. No.</b>	<b>Questions</b>	<b>Marks</b>	<b>COs</b>	<b>KL</b>	<b>PO</b>		
<b>III</b>	Viva voce मौखिक	<b>05</b>					

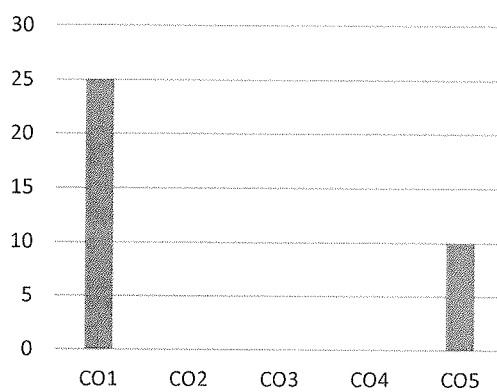
CO- Course Outcomes, KL- Knowledge Level, PO – Program Outcome




Course Outcomes	CO1	Understand the gross morphology, structure and functions of various organs of the human body.
	CO2	Understand the various homeostatic mechanisms and their imbalances.
	CO3	Remember the various tissues and organs of different systems of human body.
	CO4	Apply the hematological tests like blood cell counts, haemoglobin estimation, bleeding/clotting time etc and record blood pressure, heart rate, pulse and respiratory volume
	CO5	Apply the experiments like Olfaction, gustation reflex and eyesight.

### Bloom's Level wise Marks Distribution



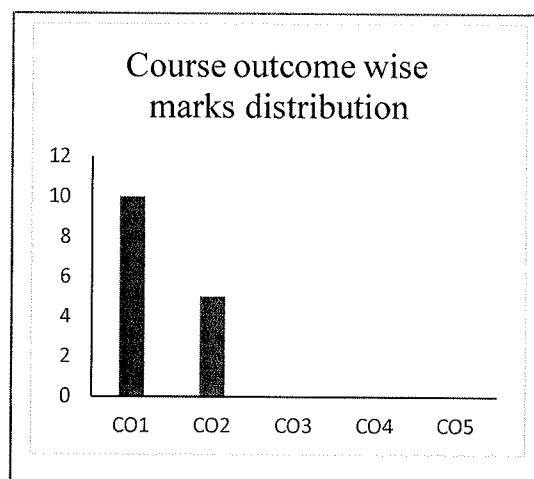
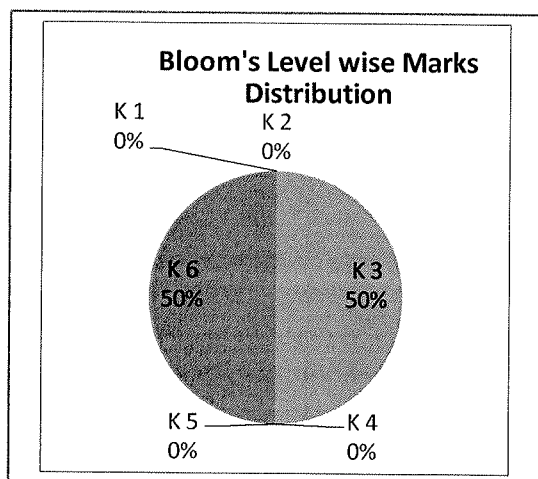
### Course outcome wise marks distribution




SCHOOL OF PHARMACY	  		2 <sup>nd</sup> INTERNAL EXAMINATION		
	Program Name	BACHELOR OF PHARMACY	Program Code	B. PHARM	
Course Name	Human Anatomy & Physiology-II (Practical)	Semester	2 <sup>nd</sup> Semester (Group-A)		
Course Code	PHM22020	Year	April 2026		
Time: 4 Hours	All the Questions are Compulsory	Maximum Marks	40		
Knowledge Level (KL)	K1 : Remembering	K3 : Applying	K5 : Evaluating		
	K2 : Understanding	K4 : Analysing	K6 : Creating		
<b>Section A</b>					
<b>[1 x 10 = 10 Marks]</b>					
Q. No.	Questions	Marks	COs	KL	PO
I	Synopsis Write synopsis on parts of Liver. सारांश- यकृत के भागों पर संक्षिप्त विवरण लिखिए।	10	CO1	K1 K2	PO10
<b>Section B</b>					
<b>[15 + 10=25 Marks]</b>					
Q. No.	Questions	Marks	COs	KL	PO
II	a. Major Experiment Identify the supplied model and describe it briefly. a. प्रमुख प्रयोग- दिए गए मॉडल की पहचान करें और उसका संक्षिप्त विवरण दें।	15	CO1	K1 K2	PO2
	b. Minor Experiment Perform an experiment to determine the functions of olfactory nerve. b. लघु प्रयोग- घ्राण तंत्रिका के कार्यों को निर्धारित करने के लिए एक प्रयोग करें।	10	CO5	K1 K2 K4	PO2
<b>Section C</b>					
<b>[05 Marks]</b>					
Q. No.	Questions	Marks	COs	KL	PO
III	Viva voce मौखिक	05			

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

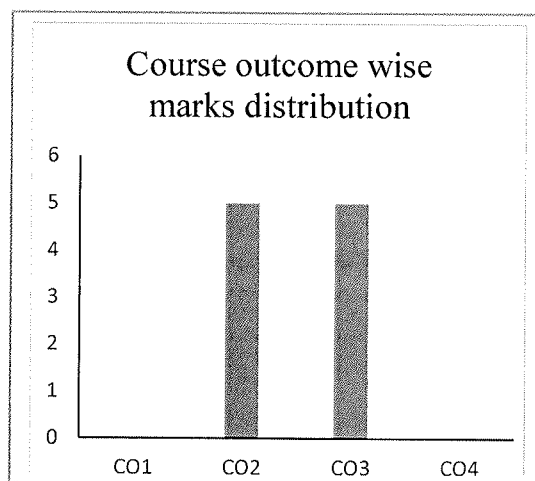
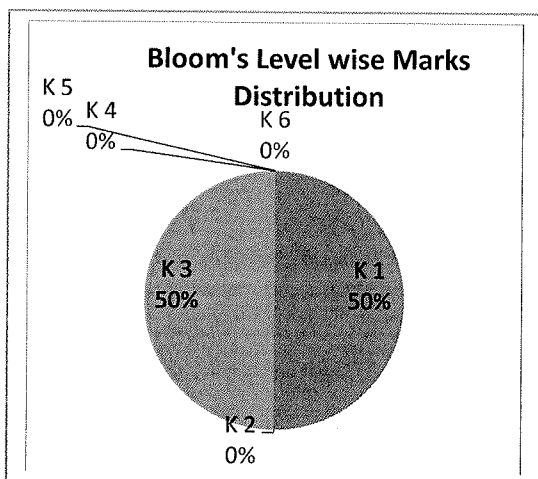
Course Outcomes	CO1	Understand different types of software for structural drawings and prepare tables and charts for presentations of chemical and biological data.
	CO2	Apply their knowledge by the access of various search engines, scientific journals, and databases, & various pharmaceutical websites for scientific information.
	CO3	Understand the use of Computers in pharmacy for the information of drug data, records, and files, drug management.
	CO4	Know about the skeletal systems and bones
	CO5	Understand the role of computer in Receiving the details, storing it and processing it and its dissemination and this continuous flow of information shows effective functioning of any system.




<b>School of Pharmacy</b>			<b>2<sup>nd</sup> INTERNAL EXAMINATION</b>		
Program Name	<b>BACHELOR OF PHARMACY</b>	Program Code	<b>B. PHARM</b>		
Course Name	<b>Computer Application in Pharmacy</b>	Semester	<b>II (GROUP D)</b>		
Course Code	<b>PHM22023</b>	Year	<b>April 2026</b>		
Time:	<b>ALL THE QUESTIONS ARE COMPULSORY</b>		Maximum Marks	<b>20</b>	
Knowledge Level (KL)	<b>K1 : Remembering</b>	<b>K3 : Applying</b>	<b>K5 : Evaluating</b>		
	<b>K2 : Understanding</b>	<b>K4 : Analysing</b>	<b>K6 : Creating</b>		
<b>Section A</b>					
<b>SYNOPSIS</b>		<b>[1 x 5 = 5 Marks]</b>			
<b>Q. No.</b>	<b>Questions</b>	<b>Marks</b>	<b>COs</b>	<b>KL</b>	<b>PO</b>
<b>1</b>	<b>Synopsis</b> संक्षेप Describe the advantages and limitations of bioinformatics. बायोइन्फॉर्मेटिक्स के लाभों और सीमाओं का वर्णन करें।	<b>05</b>	<b>CO2</b>	<b>K3</b>	<b>PO1</b>
<b>Section B</b>					
<b>EXPERIMENT</b>		<b>[1 x 10 = 10 Marks]</b>			
<b>Q. No.</b>	<b>Questions</b>	<b>Marks</b>	<b>COs</b>	<b>KL</b>	<b>PO</b>
<b>1</b>	<b>Experiment</b> प्रयोग Generating report and printing the report from patient database report. रोगी डेटाबेस से ररपोण तैयार करना और उसे प्रि करना।	<b>10</b>	<b>CO1</b>	<b>K6</b>	<b>PO1</b>
<b>VIVA VOCE</b>		<b>[ 5 Marks ]</b>			

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

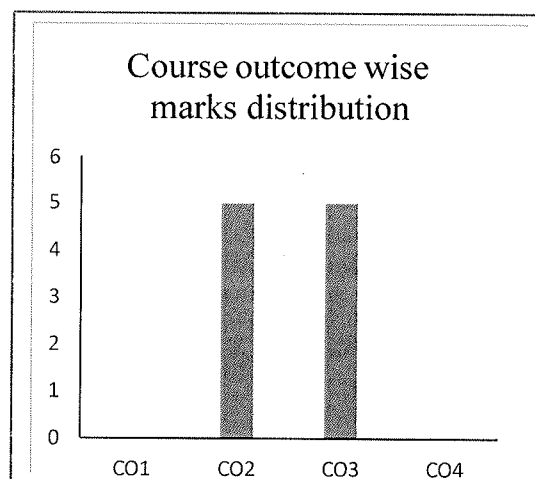
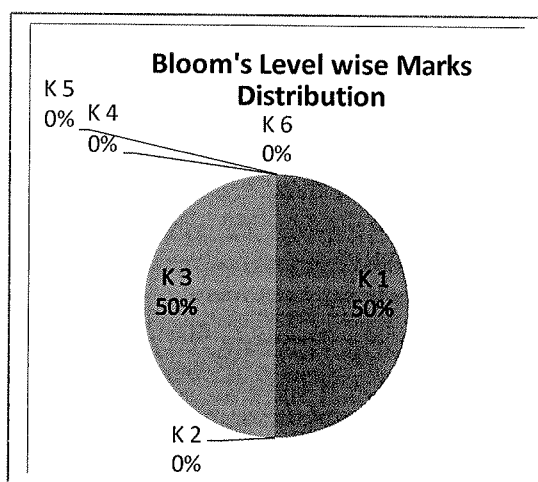
Course Outcomes	CO1	Understand different types of software for structural drawings and prepare tables and charts for presentations of chemical and biological data.
	CO2	Apply their knowledge by the access of various search engines, scientific journals, and databases, & various pharmaceutical websites for scientific information.
	CO3	Understand the use of Computers in pharmacy for the information of drug data, records, and files, drug management.
	CO4	Know about the skeletal systems and bones
	CO5	Understand the role of computer in Receiving the details, storing it and processing it and its dissemination and this continuous flow of information shows effective functioning of any system.




<b>School of Pharmacy</b>				<b>2<sup>nd</sup> INTERNAL EXAMINATION</b>		
Program Name	<b>BACHELOR OF PHARMACY</b>	Program Code	<b>B. PHARM</b>			
Course Name	<b>Computer Application in Pharmacy</b>	Semester	<b>II (Group C)</b>			
Course Code	<b>PHM22023</b>	Year	<b>April 2026</b>			
Time:	<b>ALL THE QUESTIONS ARE COMPULSORY</b>		Maximum Marks	<b>20</b>		
Knowledge Level (KL)	<b>K1 : Remembering</b>	<b>K3: Applying</b>	<b>K5: Evaluating</b>			
	<b>K2 : Understanding</b>	<b>K4: Analysing</b>	<b>K6: Creating</b>			
<b>Section A</b>						
<b>SYNOPSIS</b>			<b>[1 x 5 = 5 Marks]</b>			
<b>Q. No.</b>	<b>Questions</b>	<b>Marks</b>	<b>COs</b>	<b>KL</b>	<b>PO</b>	
<b>1</b>	Synopsis संक्षेप What is LIMS? Write its key features and importance in pharmaceutical laboratories. LIMS क्या है? फार्मास्यूटिकल प्रयोगशालाओं में इसकी प्रमुख विशेषताओं और महत्व के बारे में लिखिए।	<b>05</b>	<b>CO04</b>	<b>K1, K4</b>	<b>PO1, PO2</b>	
<b>05</b>						<b>CO04</b>
<b>Q. No.</b>	<b>Questions</b>	<b>Marks</b>	<b>COs</b>	<b>KL</b>	<b>PO</b>	
<b>1</b>	Experiment प्रयोग Retrieve the information on a drug and its adverse effects using online tools. ऑनलाइन टूल्स का उपयोग करके किसी दवा और उसके दुष्प्रभावों की जानकारी प्राप्त करें।	<b>10</b>	<b>CO03</b>	<b>K3</b>	<b>PO2, PO3</b>	
<b>VIVA VOCE</b>			<b>[ 5 Marks ]</b>			

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

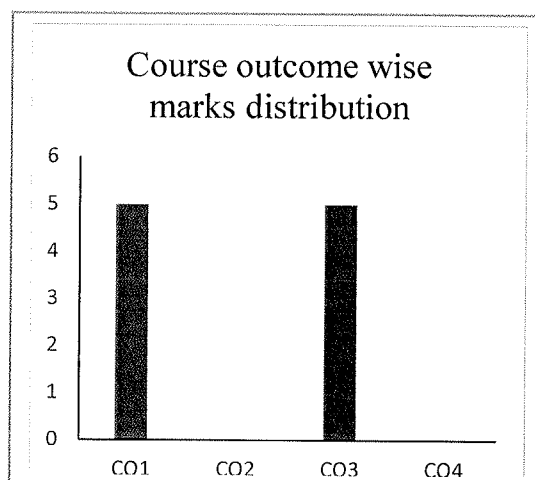
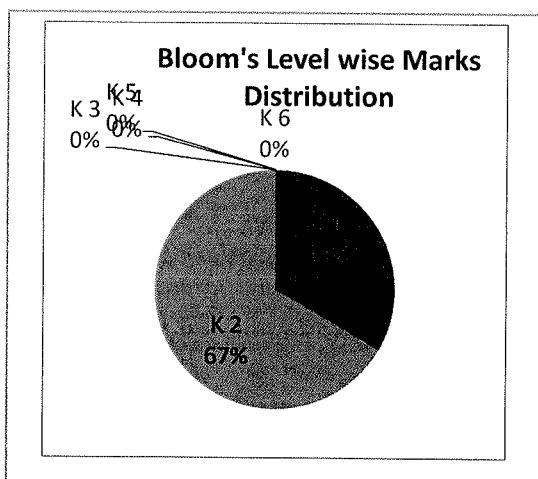
Course Outcomes	CO1	Understand different types of software for structural drawings and prepare tables and charts for presentations of chemical and biological data.
	CO2	Apply their knowledge by the access of various search engines, scientific journals, and databases, & various pharmaceutical websites for scientific information.
	CO3	Understand the use of Computers in pharmacy for the information of drug data, records, and files, drug management.
	CO4	Know about the skeletal systems and bones
	CO5	Understand the role of computer in Receiving the details, storing it and processing it and its dissemination and this continuous flow of information shows effective functioning of any system.




<b>School of Pharmacy</b>			<b>2<sup>nd</sup> INTERNAL EXAMINATION</b>		
Program Name	<b>BACHELOR OF PHARMACY</b>	Program Code	<b>B. PHARM</b>		
Course Name	<b>Computer Application in Pharmacy</b>	Semester	<b>II (Group B)</b>		
Course Code	<b>PHM22023</b>	Year	<b>April 2026</b>		
Time:	<b>ALL THE QUESTIONS ARE COMPULSORY</b>		Maximum Marks	<b>20</b>	
Knowledge Level (KL)	<b>K1 : Remembering</b>	<b>K3: Applying</b>	<b>K5: Evaluating</b>		
	<b>K2 : Understanding</b>	<b>K4: Analysing</b>	<b>K6: Creating</b>		
<b>Section A</b>					
<b>SYNOPSIS</b>			<b>[1 x 5 = 5 Marks]</b>		
<b>Q. No.</b>	<b>Questions</b>	<b>Marks</b>	<b>COs</b>	<b>KL</b>	<b>PO</b>
<b>1</b>	Synopsis संक्षेप Explain the Text Information Management System (TIMS) in detail. टेक्स्ट इन्फॉर्मेशन मैनेजमेंट सिस्टम (TIMS) की सिस्तारपूर्विक व्याख्या कीसजए।	<b>05</b>	<b>CO04</b>	<b>K1, K4</b>	<b>PO1, PO2</b>
<b>05</b>					<b>CO04</b>
<b>Q. No.</b>	<b>Questions</b>	<b>Marks</b>	<b>COs</b>	<b>KL</b>	<b>PO</b>
<b>1</b>	<b>Experiment</b> प्रयोग Design a form in MS Access to view, add, delete and modify the patient record in the database. MS Access में एक ऐसा फॉर्म डिजाइन करें, जिसका उपयोग करके डेटाबेस में मरीजों की रिकॉर्ड को देखा, डिलीट किया और सॉर्ट किया जा सके।	<b>10</b>	<b>CO03</b>	<b>K3</b>	<b>PO2, PO3</b>
<b>VIVA VOCE</b>				<b>[ 5 Marks ]</b>	

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

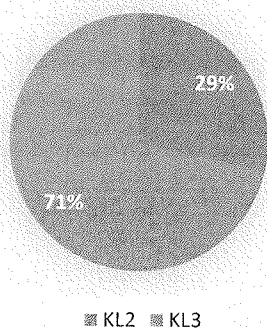
Course Outcomes	CO1	Understand different types of software for structural drawings and prepare tables and charts for presentations of chemical and biological data.
	CO2	Apply their knowledge by the access of various search engines, scientific journals, and databases, & various pharmaceutical websites for scientific information.
	CO3	Understand the use of Computers in pharmacy for the information of drug data, records, and files, drug management.
	CO4	Know about the skeletal systems and bones
	CO5	Understand the role of computer in Receiving the details, storing it and processing it and its dissemination and this continuous flow of information shows effective functioning of any system.



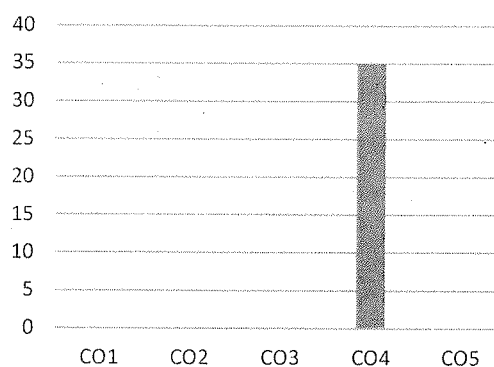
<b>School of Pharmacy</b>				<b>2<sup>nd</sup> INTERNAL EXAMINATION</b>		
Program Name	<b>BACHELOR OF PHARMACY</b>	Program Code	<b>B. PHARM</b>			
Course Name	<b>Computer Application in Pharmacy</b>	Semester	<b>II (Group A)</b>			
Course Code	<b>PHM22023</b>	Year	<b>April 2026</b>			
Time:	<b>ALL THE QUESTIONS ARE COMPULSORY</b>		Maximum Marks	<b>20</b>		
Knowledge Level (KL)	<b>K1 : Remembering</b>	<b>K3 : Applying</b>	<b>K5 : Evaluating</b>			
	<b>K2 : Understanding</b>	<b>K4 : Analysing</b>	<b>K6 : Creating</b>			
<b>Section A</b>						
<b>SYNOPSIS</b>			<b>[1 x 5 = 5 Marks]</b>			
<b>Q. No.</b>	<b>Questions</b>	<b>Marks</b>	<b>COs</b>	<b>KL</b>	<b>PO</b>	
<b>1</b>	<b>Synopsis</b> संक्षेप Explain the process of decimal to binary conversion with an example. दशमलव से बाइनरी में परिवर्तन की प्रक्रिया उदाहरण सहित समझाइए।	<b>05</b>	<b>CO2</b>	<b>K3</b>	<b>PO1</b>	
05						<b>CO01</b>
<b>Q. No.</b>	<b>Questions</b>	<b>Marks</b>	<b>COs</b>	<b>KL</b>	<b>PO</b>	
<b>1</b>	<b>Experiment</b> प्रयोग Create an MS Access database to store patient information with the required fields. MS Access में, Access का उपयोग करके आवश्यक फ़िल्ड्स के साथ मरीज़ की जानकारी को स्टोर करने के लिए एक डेटाबेस बनाएँ।	<b>10</b>	<b>CO03</b>	<b>K2</b>	<b>PO2, PO3</b>	
<b>VIVA VOCE</b>			<b>[ 5 Marks ]</b>			



Course Outcomes	CO1	Understand the steps involved in identification of unknown organic compound.
	CO2	Apply the knowledge of suitable solid derivatives from organic compounds
	CO3	Apply Construction of molecular models
	CO4	Understand Classification of Organic Compounds and its Preliminary test, Solubility test etc
	CO5	Apply Melting point/Boiling point determination of various organic compounds.

Bloom's level wise marks distribution



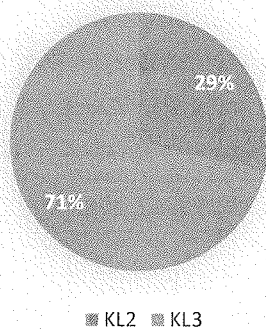
Course outcome wise marks distribution



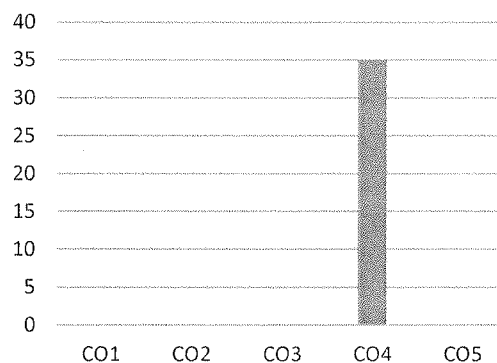
<b>SCHOOL OF PHARMACY</b>	 <b>ARKA JAIN University</b> Jharkhand 		<b>2<sup>nd</sup> INTERNAL EXAMINATION</b>		
Program Name	<b>BACHELOR OF PHARMACY</b>	Program Code	<b>B. PHARM</b>		
Course Name	<b>Pharmaceutical Organic Chemistry I (Practical)</b>	Semester	<b>2<sup>nd</sup> Semester (Group-D)</b>		
Course Code	<b>PHM22021</b>	Year	<b>April 2026</b>		
Time: 4 Hours	<b>All the Questions are Compulsory</b>	Maximum Marks	<b>40</b>		
Knowledge Level (KL)	<b>K1 : Remembering</b>	<b>K3 : Applying</b>	<b>K5 : Evaluating</b>		
	<b>K2 : Understanding</b>	<b>K4 : Analysing</b>	<b>K6 : Creating</b>		
<b>Section A</b>					
<b>[1 x 10 = 10 Marks]</b>					
<b>Q. No.</b>	<b>Questions</b>	<b>Marks</b>	<b>COs</b>	<b>KL</b>	<b>PO</b>
<b>I</b>	<b>Synopsis</b> Sketch a basic flowchart for the classification of organic compounds based on their solubility. आर्गेनिक यौकों को उनकी घुलनशीलता के आधार पर वर्गीकरण के लिए एक बुनियादी फ्लोचार्ट का आलेख बनाएं।	<b>10</b>	<b>CO4</b>	<b>K2</b>	<b>PO1</b>
<b>Section B</b>					
<b>[15 + 10=25 Marks]</b>					
<b>Q. No.</b>	<b>Questions</b>	<b>Marks</b>	<b>COs</b>	<b>KL</b>	<b>PO</b>
<b>II</b>	<b>a. Major Experiment</b> Detect the presence of phenol in the given organic compound. दिए गए कार्बनिक यौगिक में फिनॉल की उपस्थिति का पता लगाएँ।	<b>15</b>	<b>CO4</b>	<b>K3</b>	<b>PO9</b>
	<b>b. Minor Experiment</b> Detect the presence of the functional group carboxylic acid in the given sample. दिए गए नमूने में कार्बोक्सिलिक अम्ल कार्यात्मक समूह की उपस्थिति का पता लगाएँ।	<b>10</b>	<b>CO4</b>	<b>K3</b>	<b>PO9</b>
<b>Section C</b>					
<b>[05 Marks]</b>					
<b>Q. No.</b>	<b>Questions</b>	<b>Marks</b>	<b>COs</b>	<b>KL</b>	<b>PO</b>
<b>III</b>	Viva voce	<b>05</b>			


Course Outcomes	CO1	Understand the steps involved in identification of unknown organic compound.
	CO2	Apply the knowledge of suitable solid derivatives from organic compounds
	CO3	Apply Construction of molecular models
	CO4	Understand Classification of Organic Compounds and its Preliminary test, Solubility test etc
	CO5	Apply Melting point/Boiling point determination of various organic compounds.

Bloom's level wise marks distribution



Course outcome wise marks distribution

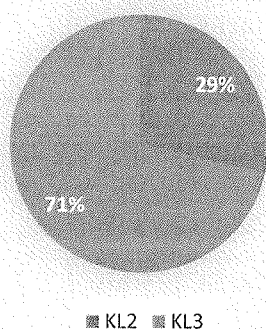


<b>SCHOOL OF PHARMACY</b>			<b>2<sup>nd</sup> INTERNAL EXAMINATION</b>		
Program Name	<b>BACHELOR OF PHARMACY</b>	Program Code	<b>B. PHARM</b>		
Course Name	<b>Pharmaceutical Organic Chemistry I (Practical)</b>	Semester	<b>2<sup>nd</sup> Semester (Group-C)</b>		
Course Code	<b>PHM22021</b>	Year	<b>April 2026</b>		
Time: 4 Hours	<b>All the Questions are Compulsory</b>	Maximum Marks	<b>40</b>		
Knowledge Level (KL)	<b>K1 : Remembering</b>	<b>K3 : Applying</b>	<b>K5 : Evaluating</b>		
	<b>K2 : Understanding</b>	<b>K4 : Analysing</b>	<b>K6 : Creating</b>		
<b>Section A</b>					
<b>[1 x 10 = 10 Marks]</b>					
<b>Q. No.</b>	<b>Questions</b>	<b>Marks</b>	<b>COs</b>	<b>KL</b>	<b>PO</b>
<b>I</b>	<b>Synopsis</b> Write down the procedure for a qualitative test for carboxylic acid. कार्बोक्सिलिक एसिड के गुणात्मक परीक्षण की प्रक्रिया लिखें।	<b>10</b>	<b>CO4</b>	<b>K2</b>	<b>PO1</b>
<b>Section B</b>					
<b>[15 + 10=25 Marks]</b>					
<b>Q. No.</b>	<b>Questions</b>	<b>Marks</b>	<b>COs</b>	<b>KL</b>	<b>PO</b>
<b>II</b>	<b>a. Major Experiment</b> Perform confirmatory tests to establish the presence of an aldehyde functional group in the given sample. दिए गए नमूने में एल्डिहाइड फंक्शनल समूह की उपस्थिति स्थापित करने के लिए पुष्टि परीक्षण करें।	<b>15</b>	<b>CO4</b>	<b>K3</b>	<b>PO9</b>
	<b>b. Minor Experiment</b> Determine the presence of halide in the given sample by Lassaigne's test. दिए गए नमूने में हैलाइड की उपस्थिति का पता लगाने के लिए Lassaigne के परीक्षण द्वारा जाँच करें।	<b>10</b>	<b>CO4</b>	<b>K3</b>	<b>PO9</b>
<b>Section C</b>					
<b>[05 Marks]</b>					
<b>Q. No.</b>	<b>Questions</b>	<b>Marks</b>	<b>COs</b>	<b>KL</b>	<b>PO</b>
<b>III</b>	Viva voce	<b>05</b>			

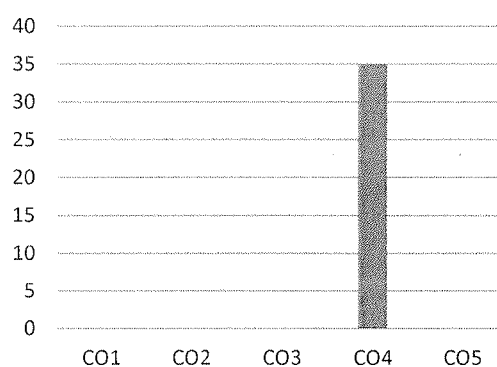
CO- Course Outcomes, KL- Knowledge Level, PO – Program Outcome



Course Outcomes	CO1	Understand the steps involved in identification of unknown organic compound.
	CO2	Apply the knowledge of suitable solid derivatives from organic compounds
	CO3	Apply Construction of molecular models
	CO4	Understand Classification of Organic Compounds and its Preliminary test, Solubility test etc
	CO5	Apply Melting point/Boiling point determination of various organic compounds.

Bloom's level wise marks distribution



Course outcome wise marks distribution

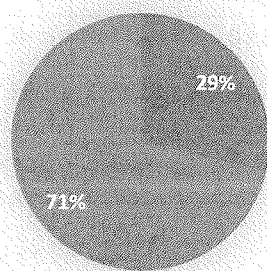


<b>SCHOOL OF PHARMACY</b>		 <b>ARKA JAIN University</b> Jharkhand		 <b>NAAC GRADE A</b> ACCREDITED		<b>2<sup>nd</sup> INTERNAL EXAMINATION</b>	
Program Name	<b>BACHELOR OF PHARMACY</b>	Program Code	<b>B. PHARM</b>				
Course Name	<b>Pharmaceutical Organic Chemistry I (Practical)</b>	Semester	<b>2<sup>nd</sup> Semester (Group-B)</b>				
Course Code	<b>PHM22021</b>	Year	<b>April 2026</b>				
Time: 4 Hours	<b>All the Questions are Compulsory</b>	Maximum Marks	<b>40</b>				
Knowledge Level (KL)	<b>K1 : Remembering</b>	<b>K3 : Applying</b>	<b>K5 : Evaluating</b>				
	<b>K2 : Understanding</b>	<b>K4 : Analysing</b>	<b>K6 : Creating</b>				
<b>Section A</b>							
<b>[1 x 10 = 10 Marks]</b>							
<b>Q. No.</b>	<b>Questions</b>	<b>Marks</b>	<b>COs</b>	<b>KL</b>	<b>PO</b>		
<b>I</b>	<b>Synopsis</b> Write down the procedure for Lassaigne's Test. लसैने के परीक्षण की प्रक्रिया लिखें	<b>10</b>	<b>CO4</b>	<b>K2</b>	<b>PO1</b>		
<b>Section B</b>							
<b>[15 + 10=25 Marks]</b>							
<b>Q. No.</b>	<b>Questions</b>	<b>Marks</b>	<b>COs</b>	<b>KL</b>	<b>PO</b>		
<b>II</b>	<b>a. Major Experiment</b> Perform specific functional group evaluations to deduce the presence of the carboxylic acid group in the given sample. दिए गए नमूने में कार्बोक्सिलिक एसिड समूह की उपस्थिति का पता लगाने के लिए विशिष्ट कार्यात्मक समूह मूल्यांकन करें।	<b>15</b>	<b>CO4</b>	<b>K3</b>	<b>PO9</b>		
	<b>b. Minor Experiment</b> Execute the preliminary tests—specifically color, odour, aliphatic/aromatic nature, and saturation/unsaturation—for the provided organic sample. प्रारंभिक परीक्षणों को निष्पादित करें—विशेष रूप से रंग, गंध, अलिफैटिक/एरोमैटिक प्रकृति, और संतृप्ति/असंतृप्ति—प्रदत्त कार्बनिक नमूने के लिए।	<b>10</b>	<b>CO4</b>	<b>K3</b>	<b>PO9</b>		
<b>Section C</b>							
<b>[05 Marks]</b>							
<b>Q. No.</b>	<b>Questions</b>	<b>Marks</b>	<b>COs</b>	<b>KL</b>	<b>PO</b>		
<b>III</b>	Viva voce	<b>05</b>					

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

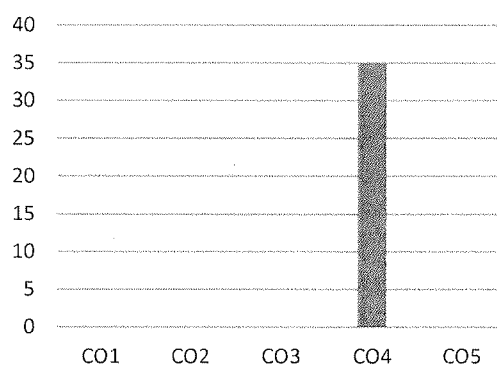
Course Outcomes	CO1	Understand the steps involved in identification of unknown organic compound.
	CO2	Apply the knowledge of suitable solid derivatives from organic compounds
	CO3	Apply Construction of molecular models
	CO4	Understand Classification of Organic Compounds and its Preliminary test, Solubility test etc
	CO5	Apply Melting point/Boiling point determination of various organic compounds.



Bloom's level wise marks distribution



■ KL2 ■ KL3

Course outcome wise marks distribution



<b>SCHOOL OF PHARMACY</b>		 <b>ARKA JAIN University</b> Jharkhand 		<b>2<sup>nd</sup> INTERNAL EXAMINATION</b>		
Program Name	<b>BACHELOR OF PHARMACY</b>	Program Code	<b>B. PHARM</b>			
Course Name	<b>Pharmaceutical Organic Chemistry I (Practical)</b>	Semester	<b>2<sup>nd</sup> Semester (Group-A)</b>			
Course Code	<b>PHM22021</b>	Year	<b>April 2026</b>			
Time: 4 Hours	<b>All the Questions are Compulsory</b>	Maximum Marks	<b>40</b>			
Knowledge Level (KL)	<b>K1 : Remembering</b>	<b>K3 : Applying</b>	<b>K5 : Evaluating</b>			
	<b>K2 : Understanding</b>	<b>K4 : Analysing</b>	<b>K6 : Creating</b>			
<b>Section A</b>						
<b>[1 x 10 = 10 Marks]</b>						
<b>Q. No.</b>	<b>Questions</b>	<b>Marks</b>	<b>COs</b>	<b>KL</b>	<b>PO</b>	
<b>I</b>	<b>Synopsis</b> Write a note on the classification of organic compounds on the basis of their carbon skeleton कार्बन कंकाल के आधार पर कार्बनिक यौगिकों के वर्गीकरण पर एक टिप्पणी लिखिए।	<b>10</b>	<b>CO4</b>	<b>K2</b>	<b>PO1</b>	
<b>Section B</b>						
<b>[15 + 10=25 Marks]</b>						
<b>Q. No.</b>	<b>Questions</b>	<b>Marks</b>	<b>COs</b>	<b>KL</b>	<b>PO</b>	
<b>II</b>	<b>a. Major Experiment</b> Determine specific functional group tests to establish the presence of a phenolic group in the given sample. दिए गए नमूने में फेनोलिक समूह की उपस्थिति स्थापित करने के लिए विशिष्ट कार्यात्मक समूह परीक्षण निर्धारित करें।	<b>15</b>	<b>CO4</b>	<b>K3</b>	<b>PO9</b>	
	<b>b. Minor Experiment</b> Prepare Lassaigne's extract for the given organic compound and demonstrate the test to detect the presence of Nitrogen. दिए गए कार्बनिक यौगिक के लिए Lassaigne का अर्क तैयार करें और नाइट्रोजन की उपस्थिति का पता लगाने के लिए परीक्षण दिखाएँ।	<b>10</b>	<b>CO4</b>	<b>K3</b>	<b>PO9</b>	
<b>Section C</b>						
<b>[05 Marks]</b>						
<b>Q. No.</b>	<b>Questions</b>	<b>Marks</b>	<b>COs</b>	<b>KL</b>	<b>PO</b>	
<b>III</b>	Viva voce	<b>05</b>				