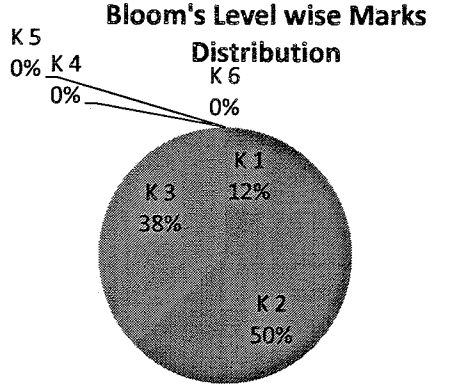
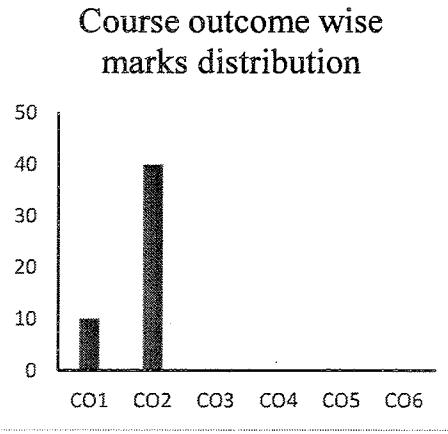
CO- Course Outcomes, KL- Knowledge Level, PO – Program Outcome

Course Outcomes	CO1	Apply the knowledge of mathematics and computing fundamentals to pharmaceutical applications for any given requirement
	CO2	Understand about computers (I/O devices), binary conversion, applications of computers in pharmacy.
	CO3	Understand the Concept of common languages in computers, algorithm flow chart, solution of problems based on biostatistics and other simple problems of pharmaceutical interest.
	CO4	Explain MS Word, MS Excel, MS Power Point.
	CO5	Explain Concept of ISIS, RASMOL, CHEMSKETCH.
	CO6	Create digital tools for pharmaceutical applications.

GRAPHICAL REPRESENTATION





ARKA JAIN University
Jharkhand

NAAC GRADE A

1st INTERNAL EXAMINATION
School of Pharmacy

Branch	**B. Pharmacy**	**Program**	**Pharmacy**
Subject Name	**Computer Applications in Pharmacy – Theory**	**Semester**	**II**
		Year	**March 2026**

Time: 1 Hr

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

Q. N	QUESTIONS	Marks	COs	KL	PO
1	Explain the concept of Information System and describe its components and types with suitable examples. सूचना प्रणाली (Information System) की संकल्पना समझाइए तथा इसके घटकों और प्रकारों का उदाहरण सहित वर्णन कीजिए।	10	CO2	K2	PO1
2	Explain the role and applications of computers in pharmacy, including drug design and pharmacokinetics. फार्मेसी में कंप्यूटर की भूमिका एवं उपयोगों की व्याख्या कीजिए, जिसमें ड्रग डिजाइन एवं फार्माकोकिनेटिक्स शामिल हो।	10	CO2	K2	PO2

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

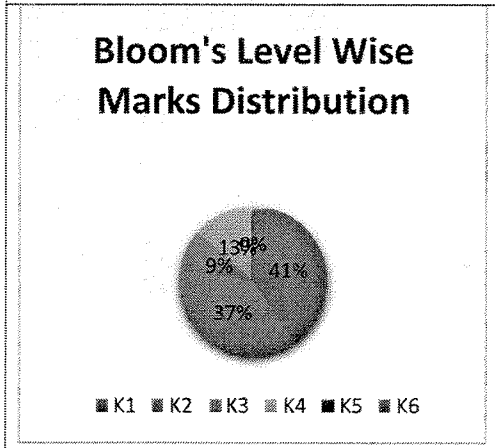
Q. No.	QUESTIONS	Marks	COs	KL	PO
3	Explain different number systems with their bases and examples. विभिन्न संख्या पद्धतियों को उनके आधार (Base) एवं उदाहरण सहित समझाइए।	5	CO2	K2	PO1,
4	Explain the process of decimal to binary conversion with an example. दशमलव से बाइनरी में परिवर्तन की प्रक्रिया उदाहरण सहित समझाइए।	5	CO1	K3	PO1, PO2
5	Write short notes on Data Storage and Data Retrieval in Pharmacy. फार्मेसी में डेटा संग्रहण (Data Storage) एवं डेटा पुनर्प्राप्ति (Data Retrieval) पर संक्षिप्त टिप्पणी लिखिए।	5	CO2	K3	PO1
6	Explain different number systems with their bases and examples.	5	CO2	K2	PO1, PO2

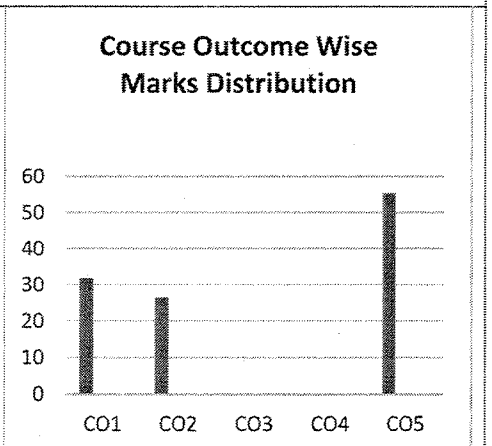
	विभिन्न संख्या पद्धतियों को उनके आधार (Base) एवं उदाहरण सहित समझाइए।				
7	Explain the process of decimal to binary conversion with an example. दशमलव से बाइनरी में परिवर्तन की प्रक्रिया उदाहरण सहित समझाइए।	5	CO1	K3	PO1
8	Define Binary Number System. Write its characteristics. बाइनरी संख्या पद्धति की परिभाषा लिखिए तथा उसकी विशेषताएँ बताइए।	5	CO2	K1	PO1, PO2

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

Course Outcomes	CO1	Understand the etiology and basics of pathophysiology
	CO2	Remember the of signs and symptoms of the diseases
	CO3	Apply the complications of the diseases.
	CO4	Understand most encountered pathophysiological state(s) and/or disease mechanism(s), as well as any clinical testing requirements
	CO5	Understand Basic principles of Cell injury Adaptation and explain the concept of inflammation and repair

GRAPHICAL REPRESENTATION





ARKA JAIN University
Jharkhand
NAAC GRADE A ACCREDITED UNIVERSITY

1st INTERNAL EXAMINATION
School of Pharmacy

Branch	B. Pharmacy	Program	Pharmacy
Subject Name	Pathophysiology (Theory)	Semester	II
		Year	March 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 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	The most common cause of cellular injury is: A) Genetic mutation B) Hypoxia C) Autoimmune reaction D) Nutritional excess **कोशिकीय क्षति का सबसे सामान्य कारण है:** A) आनुवंशिक उत्परिवर्तन B) हाइपोक्सिया C) स्वप्रतिरक्षित प्रतिक्रिया D) पोषण की अधिकता	1	CO5	K1, K2	PO9
ii	The most common type of hypertension is: A) Secondary hypertension B) Malignant hypertension C) Primary hypertension D) Renal hypertension रक्तचाप का सबसे सामान्य प्रकार है: A) द्वितीयक उच्च रक्तचाप B) घातक उच्च रक्तचाप C) आवश्यक (प्राथमिक) उच्च रक्तचाप D) वृक्क उच्च रक्तचाप	1	CO1	K1	PO2
iii	Which system plays a major role in the development of hypertension? A) RAAS B) GIT C) CNS only D) Respiratory system उच्च रक्तचाप के विकास में कौन सा तंत्र प्रमुख भूमिका निभाता है?	1	CO2	K1, K2	PO1

	A) RAAS B) GIT C) केवल CNS D) श्वसन तंत्				
iv	A key compensatory mechanism in CHF is activation of: A) Parasympathetic system B) RAAS C) Decreased ADH secretion D) Reduced sympathetic activity सीएचएफ में एक प्रमुख क्षतिपूर्ति तंत्र निम्न में से किसका सक्रियण है: ए) पैरासिम्पेथेटिक तंत्र बी) आरएएएस सी) एडीएच स्राव में कमी डी) सिम्पेथेटिक गतिविधि में कमी	1	CO2	K1, K2	PO2
v	Which organelle is primarily affected in reversible cell injury? A) Lysosome B) Mitochondria C) Golgi apparatus D) Nucleolus प्रतिवर्ती कोशिका क्षति में मुख्य रूप से कौन सा अंग प्रभावित होता है? A) लाइसोसोम B) माइटोकॉन्ड्रिया C) गोल्जी उपकरण D) केंद्रक	1	CO5	K1	PO2
vi	Atrophy is defined as: A) Increase in cell size B) Decrease in cell size and function C) Increase in cell number D) Change in cell type एट्रोफी को इस प्रकार परिभाषित किया जाता है: A) कोशिका के आकार में वृद्धि B) कोशिका के आकार और कार्य में कमी C) कोशिकाओं की संख्या में वृद्धि D) कोशिका के प्रकार में परिवर्तन	1	CO1	K1	PO10
vii	Hyperplasia is defined as: A) Increase in cell size B) Decrease in cell number C) Increase in cell number D) Abnormal nuclear changes हाइपरप्लासिया को इस प्रकार परिभाषित किया जाता है: A) कोशिका के आकार में वृद्धि B) कोशिका संख्या में कमी C) कोशिका संख्या में वृद्धि D) असामान्य नाभिकीय परिवर्तन	1	CO1	K1	PO10
viii	The chemical mediator mainly responsible for vasodilation in acute inflammation is: A) Histamine B) Insulin C) Hemoglobin D) Calcium तीव्र सूजन में वाहिका फैलाव के लिए मुख्य रूप से जिम्मेदार रासायनिक मध्यस्थ है: A) हिस्टामाइन B) इंसुलिन C) हीमोग्लोबिन D) कैल्शियम	1	CO5	K1, K2	PO1
ix	Redness in inflammation is due to: A) Decreased blood flow B) Increased blood flow C) Infection D) Pus formation सूजन में लालिमा निम्न कारणों से होती है: A) रक्त प्रवाह में कमी B) रक्त प्रवाह में वृद्धि C) संक्रमण D) मवाद का बनना	1	CO5	K1, K2	PO2
x	Healing of a wound involves formation of: A) Necrotic tissue B) Granulation tissue C) Fat tissue D) Tumor घाव भरने की प्रक्रिया में निम्न का निर्माण शामिल होता है: A) नेक्रोटिक ऊतक B) ग्रैनुलेशन ऊतक C) वसा ऊतक D) ट्यूमर	1	CO5	K1, K2	PO2

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

Q. No.	QUESTIONS	Marks	COs	KL	PO
2	Define cell injury. Discuss in detail the causes, mechanism, and morphological changes of reversible and irreversible cell injury. कोशिका क्षति को परिभाषित करें। प्रतिवर्ती और अप्रतिवर्ती कोशिका क्षति के कारणों, क्रियाविधि और रूपात्मक परिवर्तनों पर विस्तार से चर्चा करें।	10	CO5	K1, K2, K4	PO1, PO2
3	Define Congestive Heart Failure (CHF). Discuss its etiology, pathogenesis, diagnostic blood tests, and pharmacological management. कंजेस्टिव हार्ट फेलियर (सीएचएफ) को परिभाषित करें। इसके कारण, रोगजनन, नैदानिक रक्त परीक्षण और औषधीय प्रबंधन पर चर्चा करें।	10	CO2	K1, K2, K3	PO1, PO2

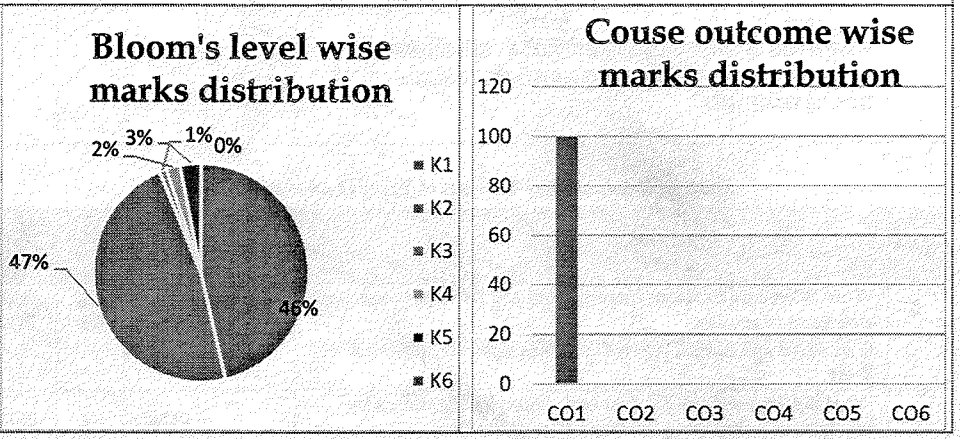
Section C (Answer any Two out of Three) [2 x 5 = 10 Marks]

Q. No.	QUESTIONS	Marks	COs	KL	PO
4	Write short notes on atrophy, hypertrophy, hyperplasia, metaplasia, and dysplasia. एट्रोफी, हाइपरट्रोफी, हाइपरप्लासिया, मेटाप्लासिया और डिसप्लासिया पर संक्षिप्त नोट्स लिखिए।	5	CO5	K1, K2	PO1
5	Describe the role of RAAS in the pathogenesis of hypertension. उच्च रक्तचाप के रोगजनन में RAAS की भूमिका का वर्णन कीजिए।	5	CO1	K1, K2, K4	PO1
6	Describe the cellular events involved in acute inflammation. तीव्र सूजन में शामिल कोशिकीय घटनाओं का वर्णन करें।	5	CO5	K1, K2	PO1, PO2

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

Course Outcomes	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



ARKA JAIN University Jharkhand | NAAC GRADE A ACCREDITED UNIVERSITY

1st INTERNAL EXAMINATION
School of Pharmacy

Branch	B. Pharmacy	Program	Pharmacy
Subject Name	Pharmaceutical Organic Chemistry I - (Theory)	Semester	II
		Year	March 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 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 correct IUPAC name for a saturated open-chain hydrocarbon containing 9 carbon atoms? A) Octane B) Nonane C) Decane D) Heptane निम्नलिखित में से 9 कार्बन परमाणु वाला एक संतृप्त खुली-श्रृंखला हाइड्रोकार्बन का सही IUPAC नाम कौन सा है? A) ऑक्टेन B) नोनैन C) डेकैन D) हेप्टेन	1	CO1	K1, K2	PO1
ii	A carbocyclic compound that contains a benzene ring is specifically classified as: A) Alicyclic B) Aromatic C) Heterocyclic D) Acyclic एक कार्बोसाइक्लिक यौगिक जिसमें बेंजीन शामिल होता है, उसे विशेष रूप से इस प्रकार वर्गीकृत किया जाता है: A) एलिसाइक्लिक B) अरोमेटिक C) हेटेरोसाइक्लिक D) एसाइक्लिक	1	CO1	K1, K2	PO1
iii	What is the IUPAC name for the compound CH_3-$CH(CH_3)$-CH_2-CH_2-CH_3? A) n-Pentane B) 2-Methylbutane C) 2-Methylpentane D) Isopentane संयुक्त CH_3-$CH(CH_3)$-CH_2-CH_2-CH_3 के लिए IUPAC नाम क्या है? A) एन-पेंटेन B) 2-मेथाइलब्यूटेन C) 2-मेथाइलपेंटेन D) आइसो पेंटेन	1	CO1,	K2, K4, K5	PO2

iv	Compounds with the same molecular formula but different connectivity of atoms are known as: A) Stereoisomers B) Conformers C) Structural isomers D) Isotopes एक ही आणविक सूत्र वाले लेकिन परमाणुओं की जुड़ाव संरचना अलग होने वाले यौगिकों को कहा जाता है: A) स्टिरीयोइसोमर्स B) कॉन्फ़ॉर्मर्स C) स्ट्रक्चरल इसोमर्स D) आइसोटोप्स	1	CO1	K1, K2	PO1
v	Which type of structural isomerism is exhibited by Pentan-2-one and Pentan-3-one? A) Chain isomerism B) Position isomerism C) Functional isomerism D) Metamerism पेंटेन-2-ओन और पेंटेन-3-ओन किस प्रकार की संरचनात्मक आइसोमरिज़्म प्रदर्शित करते हैं? A) श्रृंखला आइसोमरिज़्म B) स्थिति आइसोमरिज़्म C) क्रियात्मक आइसोमरिज़्म D) मेटामेरिज़्म	1	CO1	K1, K2, K3	PO1
vi	In the common system of nomenclature, a carbon atom attached to three other carbon atoms is referred to as: A) Primary (1°) B) Secondary (2°) C) Tertiary (3°) D) Quaternary (4°) सामान्य नामकरण प्रणाली में, एक कार्बन परमाणु जिसे तीन अन्य कार्बन परमाणुओं से जोड़ा गया हो, उसे कहा जाता है: A) प्राथमिक (1°) B) माध्यमिक (2°) C) तृतीयक (3°) D) चतुर्थक (4°)	1	CO1	K1, K2, K4	PO1, PO2
vii	Which of the following is a "Cycloalkane" with six carbon atoms? A) Hexane B) Benzene C) Cyclohexane D) Cyclohexene निम्नलिखित में कौन सा 'साइक्लोअल्केन' है जिसमें छह कार्बन परमाणु हैं? A) हेक्सेन B) बेंजीन C) साइक्लोहेक्सेन D) साइक्लोहेक्सीन	1	CO1	K1, K2	PO1
vii i	Ethanol and Dimethyl ether (C_2H_6O) are examples of which type of isomerism? A) Position isomerism B) Chain isomerism C) Functional isomerism D) Tautomerism एथेनॉल और डाइमिथिल ईथर (C_2H_6O) किस प्रकार के समरूपता का उदाहरण हैं? A) स्थिति आइसोमरिज़्म B) श्रृंखला आइसोमरिज़्म C) क्रियात्मक आइसोमरिज़्म D) टौटोमेरिज़्म	1	CO1	K1, K2, K5	PO1
ix	The IUPAC name for the cyclic compound consisting of a four-carbon ring is: A) Cyclopentane B) Cyclobutane C) Butane D) Cyclopropane चार-कार्बन रिंग वाले चक्रीय यौगिक का IUPAC नाम है: A) साइक्लोपेंटेन B) साइक्लोब्यूटेन C) ब्यूटेन D) साइक्लोप्रोपेन	1	CO1	K1, K2	PO1
x	Chain isomerism is possible only in alkanes containing a minimum of how many carbon atoms? A) 2 B) 3 C) 4 D) 5 चेन आइसोमरिज़्म केवल उन एल्केंस में संभव है जिनमें न्यूनतम कितने कार्बन परमाणु होते हैं? A) 2 B) 3 C) 4 D) 5	1	CO1	K1, K2, K5	PO1, PO2

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

Q. No.	QUESTIONS	Marks	COs	KL	PO
2	What is structural isomerism? Define and provide one pair of examples from each. संरचनात्मक आइसोमरिज़्म क्या है? परिभाषित करें और प्रत्येक से एक जोड़े का उदाहरण दें।	10	CO1	K1, K2	PO1
3	Define and classify organic compounds based on their carbon skeleton. Provide a detailed flow chart and include one example from each. कार्बन कंकाल के आधार पर कार्बनिक यौगिकों को परिभाषित करें और वर्गीकृत करें। एक विस्तृत प्रवाह चार्ट प्रदान करें और प्रत्येक प्रकार से एक उदाहरण शामिल करें।	10	CO1	K1, K2	PO1, PO2

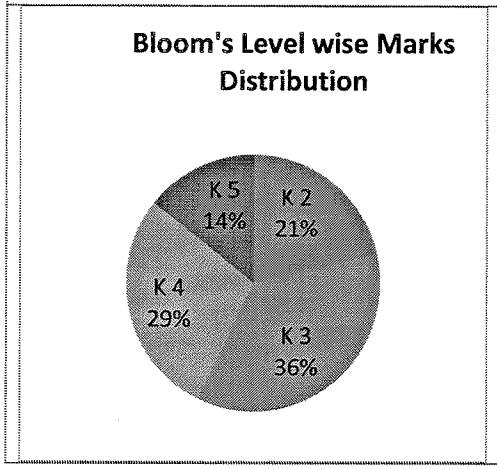
Section C Answer any Two out of Three [2 x 5 = 10 Marks]

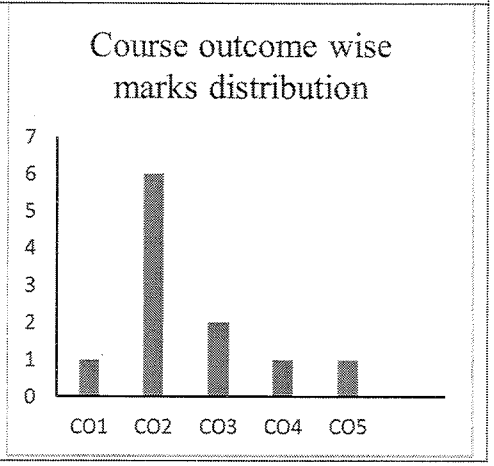
Q. No.	QUESTIONS	Marks	COs	KL	PO
4	Write difference between Enantiomers and Diastereomers with structural examples. एनांटिओमर्स और डायस्टीरियोमर्स के बीच अंतर स्ट्रक्चरल उदाहरणों के साथ लिखें।	5	CO1	K1, K2,	PO1, PO2
5	What is Metamerism? Explain with examples. Explain why this type of isomerism is commonly seen in ethers and ketones. Provide the structures for Diethyl ether and Methyl propyl ether. मेटामेरिज़्म क्या है? उदाहरण के साथ समझाएं। समझाएं कि यह प्रकार का आइसोमेरिज़्म ईथर और कीटोन्स में आमतौर पर क्यों देखा जाता है। डाइएथिल ईथर और मिथाइल प्रोपिल ईथर के संरचनाएं प्रदान करें।	5	CO1	K1, K2	PO1, PO2
6	Differentiate between Homocyclic and Heterocyclic compounds. Give the definition for both and provide the structures of Cyclohexane and Pyridine. होमोसाइक्लिक और हेटेरोसाइक्लिक यौगिकों के बीच अंतर बताइए। दोनों के लिए परिभाषा दीजिए और साइक्लोहेक्सेन और पाइरिडिन की संरचनाएँ प्रदान कीजिए।	5	CO1	K1, K2	PO1, PO2

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

Course Outcomes	CO1	Apply the knowledge of mathematics and computing fundamentals to pharmaceutical applications for any given requirement
	CO2	Discuss about computers (I/O devices), binary conversion, applications of computers in pharmacy.
	CO3	Describe Concept of common languages in computers, algorithm flow chart, solution of problems based on biostatistics and other simple problems of pharmaceutical interest.
	CO4	Explain MS Word, MS Excel, MS Power Point.
	CO5	Explain Concept of ISIS, RASMOL, CHEMSKETCH.
	CO6	Know the web-based tools for pharmacy practice. Apply the knowledge to design and develop digital tools for pharmaceutical applications.

GRAPHICAL REPRESENTATION





ARKA JAIN University
Jharkhand

NAAC GRADE A
ACCREDITED UNIVERSITY

1st INTERNAL EXAMINATION
School of Pharmacy

Branch	**B. Pharmacy**	**Program**	**Pharmacy**
Subject Name	**Environmental Science (Theory)**	**Semester**	**II**
		Year	**March 2026**

Time: 1 Hr

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

Q. N	QUESTIONS	Marks	COs	KL	PO
1	Explain the concept of natural resources and classify them into renewable and non-renewable resources. Discuss the ecological and socio-economic consequences of over-exploitation of forest, water, and mineral resources, and suggest suitable conservation strategies. प्राकृतिक संसाधनों की अवधारणा की व्याख्या कीजिए तथा उन्हें नवीकरणीय और अनवीकरणीय संसाधनों में वर्गीकृत कीजिए। वन, जल तथा खनिज संसाधनों के अत्यधिक दोहन के पारिस्थितिक एवं सामाजिक-आर्थिक प्रभावों की चर्चा कीजिए तथा उनके संरक्षण के उपाय सुझाइए।	10	CO2 CO5	K3, K4	PO1 PO6
2	Describe the structure and functions of an ecosystem. Discuss the role of producers, consumers, and decomposers in maintaining ecological balance. Illustrate your answer with suitable examples from forest and aquatic ecosystems. पारिस्थितिकी तंत्र (Ecosystem) की संरचना एवं कार्यों का वर्णन कीजिए। पारिस्थितिक संतुलन बनाए रखने में उत्पादकों, उपभोक्ताओं तथा अपघटकों की भूमिका की चर्चा कीजिए। वन एवं जलीय पारिस्थितिकी तंत्र के उपयुक्त उदाहरणों के साथ अपने उत्तर को स्पष्ट कीजिए।	10	CO2	K2 K4	PO1 PO6

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

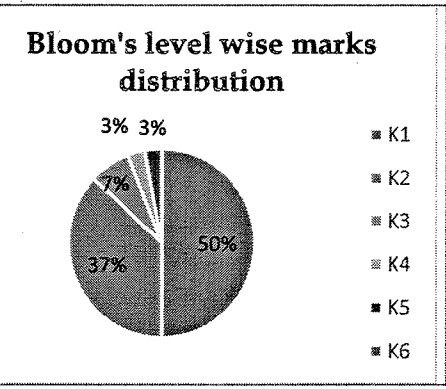
Q. No.	QUESTIONS	Marks	COs	KL	PO
3	Explain the multidisciplinary nature of Environmental Science and its importance in sustainable development. पर्यावरण विज्ञान की बहुविषयक प्रकृति की व्याख्या कीजिए तथा सतत विकास में इसके महत्व को स्पष्ट कीजिए।	5	CO1 CO2	K1, K2	PO1,
4	Discuss the major causes and consequences of deforestation on ecosystem stability. वनों की कटाई (Deforestation) के प्रमुख कारणों तथा पारिस्थितिकी तंत्र की स्थिरता पर उसके प्रभावों की चर्चा कीजिए।	5	CO2 CO3	K2, K3	PO1, PO6
5	Write a short note on energy flow in an ecosystem and explain the significance of the energy pyramid. पारिस्थितिकी तंत्र में ऊर्जा प्रवाह पर संक्षिप्त टिप्पणी लिखिए तथा ऊर्जा पिरामिड के महत्व को स्पष्ट कीजिए।	5	CO2	K1, K2	PO1

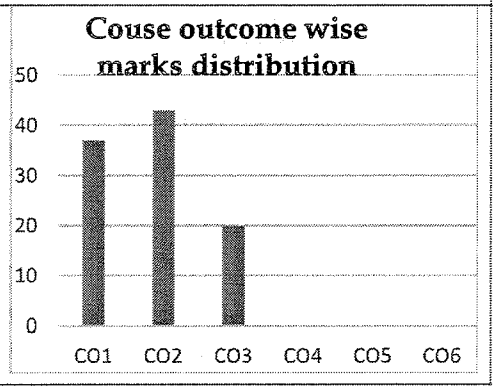
6	Describe the characteristic features of desert and grassland ecosystems. मरुस्थलीय तथा घासभूमि पारिस्थितिकी तंत्रों की प्रमुख विशेषताओं का वर्णन कीजिए।	5	CO2	K3	PO1
7	Explain the role of an individual in the conservation of natural resources. प्राकृतिक संसाधनों के संरक्षण में एक व्यक्ति की भूमिका को स्पष्ट कीजिए।	5	CO3 CO4	K3	PO6 PO7
8	Write a short note on aquatic ecosystems (ponds, lakes, rivers, oceans, and estuaries).	5	CO2	K1, K2	PO1

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

Course Outcomes	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.

GRAPHICAL REPRESENTATION





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

ARKA JAIN University Jharkhand — NAAC GRADE A — ACCREDITED UNIVERSITY

1st INTERNAL EXAMINATION
School of Pharmacy

Branch	B. Pharmacy	Program	Pharmacy
Subject Name	Biochemistry I (Theory)	Semester	II
		Year	March 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 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

Q. N 1	QUESTIONS	Marks	COs	KL	PO
i	How is ATP converted to ADP ? a) Addition of phosphate group b) Hydrolysis and loss of phosphate group c) Addition of adenine d) Reduction reaction एटीपी को एडीपी में कैसे बदला जाता है? a) फॉस्फेट समूह का जुड़ना b) हाइड्रोलाइसिस और फॉस्फेट समूह का नुकसान c) एडीनीन का जोड़ना d) रिडक्शन प्रतिक्रिया	1	CO1	K1	PO 1,PO2
ii	What is the SI unit of entropy? a) Joule b) Joule/kg c) Joule/K d) Kelvin एंट्रोपी की एसआई इकाई क्या है? a) जूल b) जूल/किग्रा c) जूल/के d) केल्विन	1	CO1	K1	PO 2
iii	What are the compositions of Triglycerides? a) Glycerol + 2 fatty acids b) Glycerol + 3 fatty acids c) 3 glycerol + 1 fatty acid d) Amino acids ट्राइग्लिसराइड्स की संरचना क्या है? a) ग्लिसरॉल + 2 फैटी एसिड b) ग्लिसरॉल + 3 फैटी एसिड c) 3 ग्लिसरॉल + 1 फैटी एसिड d) अमीनो एसिड	1	CO1	K1, k2	PO 2
iv	Which of the following is a non-reducing sugar? a) Glucose b) Lactose c) Sucrose d) Galactose निम्न में से कौनसा नॉन-रीड्यूसिंग शुगर है? a) ग्लूकोज b) लेक्टोज़	1	CO1	K1 K2	PO 2

	c) सुक्रोज़ d) गैलेक्टोज़				
v	**What does reaction with -ΔG represent?** a) Non spontaneous b) Endergonic c) Spontaneous d) Endothermic नकारात्मक ΔG वाला प्रतिक्रिया क्या होगी? a) स्वेच्छापूर्ण नहीं b) एंडरगोनिक c) स्वेच्छापूर्ण d) एंडोथर्मिक	1	CO1	K2	PO 1,PO2
vi	**Which enzyme is responsible for synthesis of cAMP from ATP.** a) DNA polymerase b) Adenylyl cyclase c) ATP synthase d) Hexokinase एटीपी से cAMP के संश्लेषण के लिए जिम्मेदार एंजाइम कौन सा है? a) डीएनए पॉलीमरेज़ b) एडेनाइलील साइक्लेस c) एटीपी सिंथेस d) हेक्सोकाइनेज़	1	CO1	K1	PO 2
vii	**A Phospholipid is found abundance in which of the following.** a) Cell wall b) Cell membrane c) Ribosomes d) Nucleus फॉस्फोलिपिड्स का महत्वपूर्ण घटक क्या है? a) कोशिका की दीवार b) कोशिका झिल्ली c) राइबोसोम d) न्यूक्लियस	1	CO2	K1	PO 1,PO2
viii	**Which of the following is the building block of Proteins ?** a) Fatty acids b) Nucleotides c) Amino acids d) Monosaccharides प्रोटीन के निर्माण खंड को क्या कहा जाता है? a) फैटी एसिड b) न्यूक्लियोटाइड c) अमीनो एसिड d) मोनोसैकराइड्स	1	CO3	K1	PO 1
ix	**Which is the correct sign of Enthalpy (H)?** a) H = U – PV b) H = U + PV c) H = PV – U d) H = U/PV एंथाल्पी (H) का सही प्रतिनिधित्व कौन सा है? a) H = U – PV b) H = U + PV c) H = PV – U d) H = U/PV	1	CO1	K2, k4	PO 2
X	Which among the type of sugar that do no react with substances like Benedict's solution. a) Reducing sugar b) Non-Reducing sugar शुगर के किस टाइप में से बेनेडिक्ट सॉल्यूशन जैसी चीज़ों के साथ कोई रिएक्ट नहीं होता है? a) रिड्यूसिंग शुगर b) नॉन-रिड्यूसिंग शुगर	1	CO1	K1, k2	PO 1,PO2

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

Q. No.	QUESTIONS	Marks	COs	KL	PO
2	What are Proteins? Classify proteins with different structures. प्रोटीन क्या हैं? अलग-अलग स्ट्रक्चर वाले प्रोटीन को क्लासिफ़ाई करें।	10	CO3	K1,l2	PO 1
3	Describe the structure and biological functions of ATP. Explain the ATP and ADP cycle and the role of cyclic AMP? ATP की संरचना और जैविक कार्यों का वर्णन करें। ATP और ADP चक्र को समझाएँ तथा साइक्लिक AMP की भूमिका एक द्वितीयक संदेशवाहक के रूप में बताएं।	10	CO2	K1, k2	PO 1,PO2

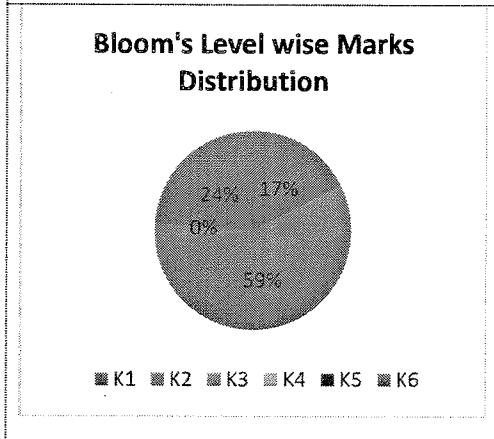
Section C (Answer any Two out of Three) [2 x 5 = 10 Marks]

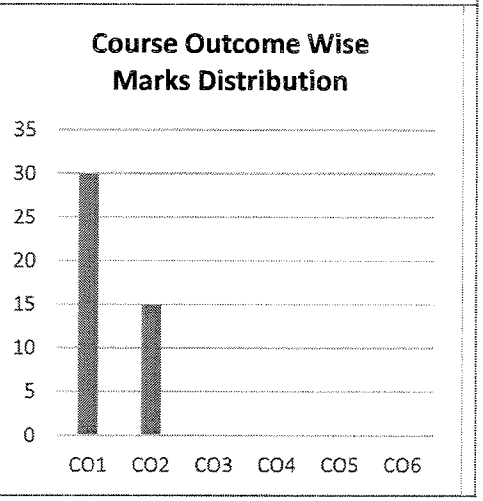
Q. No.	QUESTIONS	Marks	COs	KL	PO
4	Write the Differentiation between Reducing and Non-Reducing sugar. रिड्यूसिंग और नॉन-रिड्यूसिंग शुगर के बीच अंतर लिखें।	5	CO2	K1, k2	PO 1,PO2
5	Define Enthalpy and mention its importance. Write the equation for enthalpy. एंथैल्पी की परिभाषा दें और इसके महत्व का उल्लेख करें। एंथैल्पी का समीकरण लिखें।	5	CO1	K1, k5	PO 2
6	What are carbohydrates? State the different Classifications of carbohydrate? कार्बोहाइड्रेट क्या हैं? कार्बोहाइड्रेट के अलग-अलग क्लासिफिकेशन बताएं।	5	CO2	K2, k3	PO 1,PO2

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	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





ARKA JAIN University, Jharkhand — NAAC GRADE A — ACCREDITED UNIVERSITY

1st INTERNAL EXAMINATION
School of Pharmacy

Branch	B. Pharmacy	Program	Pharmacy
Subject Name	Human Anatomy and Physiology II (Theory)	Semester	II
		Year	March 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 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	Following are the parts of diencephalon except- a. Thalamus b. Hypothalamus c. Epithalamus d. cerebellum निम्नलिखित में से डायएनसेफेलॉन के कौन से भाग को छोड़कर बाकी सभी भाग शामिल हैं? a. थैलेमस b. हाइपोथैलेमस c. एपिथैलेमस d. सेरिबेलम	1	CO1	K1	PO1
ii	What is cranial nerve-X a.Vagus b. optic c. olfactory d. oculomotor कपाल तंत्रिका-X क्या है? a. वेगस b. ऑप्टिक c. घ्राण d. नेत्र तंत्रिका	1	CO2	K1 K2	PO2
iii	What kind of nerve facial nerve is a. Sensory b. Motor c. Both a&b d. None of these चेहरे की तंत्रिका किस प्रकार की तंत्रिका है? a. संवेदी b. प्रेरक c. दोनों a और b d. इनमें से कोई नहीं	1	CO2	K1 K2	PO1
iv	Which nerve helps in tongue movement a.Accesory b. Abducens c. Trochlear d. Hypoglossal जीभ की गति में कौन सी तंत्रिका सहायक होती है? a. सहायक तंत्रिका b. एब्ड्यूसेन्स तंत्रिका c. ट्रोक्लियर तंत्रिका d. हाइपोग्लोसल तंत्रिका	1	CO2	K1 K2	PO2
v	Upper folded part of brain is known as a. Cerebral cortex b. substantia nigra	1	CO1	K2	PO2

	c. Dura mater d. Arachnoid mater मस्तिष्क के ऊपरी मुड़े हुए भाग को कहते हैं: a. सेरेब्रल कॉर्टेक्स b. सबस्टैंशिया नाइग्रा c. ड्यूरा मैटर d. एराक्नोइड मैटर				
vi	How many ventricles are found in human brain a.1 b.2 c.3 d.4 मानव मस्तिष्क में कितने निलय होते हैं? a.1 b.2 c.3 d.4	1	CO1	K1	PO1, PO2
vii	Which lobe is known as auditory cortex a. Frontal b. Parietal c. Temporal d. Occipital श्रवण प्रांतस्था (ऑडिटरी कॉर्टेक्स) किस भाग को कहा जाता है? a. ललाट b. पार्श्विका c. टेम्पोरल d. पश्चकपाल	1	CO1	K2	PO1, PO2
viii	How many thalamus are found in brain a.1 b.2 c.3 d.4 मस्तिष्क में कितने थैलेमस पाए जाते हैं? a.1 b.2 c.3 d.4	1	CO1	K1	PO1, PO2
ix	which area of the brain is responsible for ability to speak a. Broca's b. Wernick's c. central sulcus d. None मस्तिष्क का कौन सा क्षेत्र बोलने की क्षमता के लिए जिम्मेदार है? a. ब्रोका का क्षेत्र b. वर्निक का क्षेत्र c. केंद्रीय सल्कस d. इनमें से कोई नहीं	1	CO2	K2	PO2
x	Which part of brain is responsible for production of Dopamine a.Red nucleus b.Pineal body c. Substantia nigra d. None of these मस्तिष्क का कौन सा भाग डोपामाइन के उत्पादन के लिए जिम्मेदार है? a. लाल नाभिक b. पीनियल ग्रंथि c. सबस्टैंशिया नाइग्रा d. इनमें से कोई नहीं	1	CO2	K2	PO1, 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 brain and explain the different parts of fore brain, mid brain and hind brain. मस्तिष्क का एक साफ-सुथरा और स्पष्ट आरेख बनाएं और अग्र मस्तिष्क, मध्य मस्तिष्क और पश्च मस्तिष्क के विभिन्न भागों की व्याख्या करें।	10	CO1	K2 K6	PO1, PO2
3	Briefly describe about neurons, neuroglial cells and meninges. न्यूरॉन्स, न्यूरोग्लियल कोशिकाओं और मेनिन्जेस के बारे में संक्षेप में वर्णन कीजिए।	10	CO1	K2	PO1, PO2

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

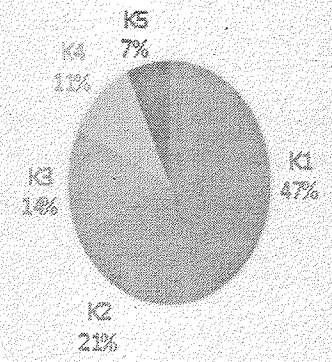
Q. No.	QUESTIONS	Marks	COs	KL	PO
4	Write short notes on action potential. क्रिया क्षमता पर संक्षिप्त टिप्पणी लिखें।	5	CO2	K2	PO1, PO2
5	write down the physiology of reflex activity. प्रतिवर्ती क्रिया की शरीरक्रिया विज्ञान लिखिए।	5	CO2	K2	PO1
6	Describe briefly about spinal cord with diagram. रेखाचित्र सहित रीढ़ की हड्डी का संक्षेप में वर्णन कीजिए।	5	CO1	K1 K6	PO1, PO2

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

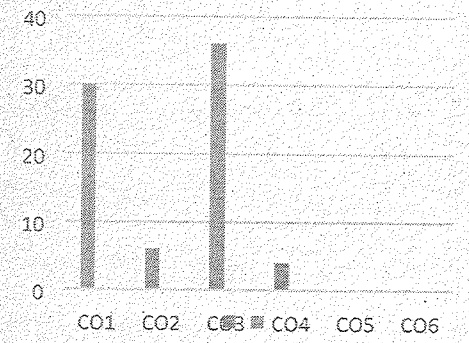
Course Outcomes	CO1	Apply the knowledge of mathematics and computing fundamentals to pharmaceutical applications for any given requirement
	CO2	Understand about computers (I/O devices), binary conversion, applications of computers in pharmacy.
	CO3	Understand the Concept of common languages in computers, algorithm flow chart, solution of problems based on biostatistics and other simple problems of pharmaceutical interest.
	CO4	Apply MS Word, MS Excel, MS Power Point.
	CO5	Apply Concept of ISIS, RASMOL, CHEMSKETCH.
	CO6	Create digital tools for pharmaceutical applications.

GRAPHICAL REPRESENTATION

BLOOM'S LEVEL WISE MARKS DISTRIBUTION



COURSE WISE MARKS DISTRIBUTION



ARKA JAIN University
Jharkhand

NAAC GRADE A

1st INTERNAL EXAMINATION
School of Pharmacy

Branch	**B. Pharmacy**	**Program**	**Pharmacy**
Subject Name	**Computer Applications in Pharmacy – Theory**	**Semester**	**II**
		Year	**March 2026**

Time: 1 Hr

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

Q. N	QUESTIONS	Marks	COs	KL	PO
1	What are number system? Explain the different types of number system with suitable examples? नंबर सिस्टम क्या हैं? सही उदाहरणों के साथ अलग-अलग तरह के नंबर सिस्टम को समझाएं?	10	CO1	K1, K2	PO1
2	Convert the following binary numbers to decimal form. $(101101)_2$, $(1010)_2$, $(100101)_2$, $(10000001)_2$. नीचे दिए गए बाइनरी नंबरों को डेसिमल फ़ॉर्म में बदलें। (101101)2 , (1010)2, (100101)2, (10000001)2..	10	CO3	K1, K2	PO1

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

Q. No.	QUESTIONS	Marks	COs	KL	PO
3	Write the difference between octal and hexadecimal number system. ऑक्टल और हेक्साडेसिमल नंबर सिस्टम के बीच अंतर लिखें।	5	CO1	K2, K4	PO1,
4	Convert $(423)_{10}$ to Hexadecimal. (423)10 को हेक्साडेसिमल में परिवर्तित करें.	5	CO1	K1, K2	PO1, PO2
5	Write a short note on octal to binary conversion with suitable examples. सही उदाहरणों के साथ ऑक्टल से बाइनरी कन्वर्ज़न पर एक छोटा नोट लिखें।	5	CO1	K1, K3	PO1
6	Explain decimal number system with suitable examples. सही उदाहरणों के साथ डेसिमल नंबर सिस्टम समझाएं।	5	CO3	K1, K2	PO1, PO2
7	Write a short note on decimal to octal conversion with suitable examples. सही उदाहरणों के साथ डेसिमल से ऑक्टल कन्वर्ज़न पर एक छोटा नोट लिखें।	5	CO3	K1, K3	PO1

8	Explain decimal to hexadecimal conversion with suitable examples. सही उदाहरणों के साथ डेसिमल से हेक्साडेसिमल में बदलने को समझाएं।	5	CO4	K1, K2	PO1, PO2

SCHOOL OF PHARMACY	ARKA JAIN University Jharkhand NAAC GRADE A		1st INTERNAL EXAMINATION
Program Name	BACHELOR OF PHARMACY	Program Code	B. PHARM
Course Name	Human Anatomy and Physiology-II(Practical)	Semester	2nd Semester (Group-A)
Course Code	PHM22020	Year	March 2026
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 parts of neuron with diagram. सार: आरेख सहित न्यूरॉन के भागों पर संक्षिप्त विवरण लिखिए।	10	CO1	K1 K6	PO10

Section B

[15 + 10=25 Marks]

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 Identify the supplied model and describe it briefly. b.लघु प्रयोग दिए गए मॉडल की पहचान करें और उसका संक्षिप्त विवरण दें।	10	CO3	K1 K2	PO2

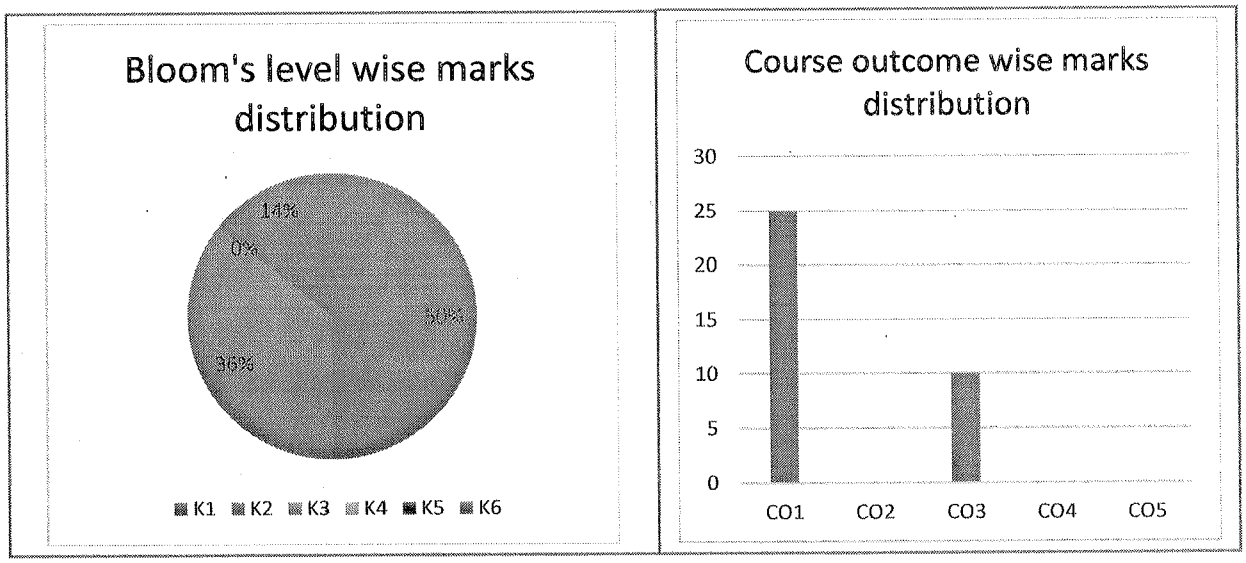
Section C

[05 Marks]

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 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.



SCHOOL OF PHARMACY	ARKA JAIN University Jharkhand | NAAC GRADE A		1st INTERNAL EXAMINATION
Program Name	BACHELOR OF PHARMACY	Program Code	B. PHARM
Course Name	Human Anatomy and Physiology-II(Practical)	Semester	2nd Semester (Group-B)
Course Code	PHM22020	Year	March 2026
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 parts of spinal cord. सार: रीढ़ की हड्डी के भागों पर संक्षिप्त विवरण लिखिए।	10	CO1	K1 K2	PO10

Section B

[15 + 10=25 Marks]

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 K6	PO2
	b. Minor Experiment Perform an experiment to determine the function of olfactory nerve. b.लघु प्रयोग घ्राण तंत्रिका के कार्य का निर्धारण करने के लिए एक प्रयोग करें।	10	CO5	K1 K2 K4	PO2

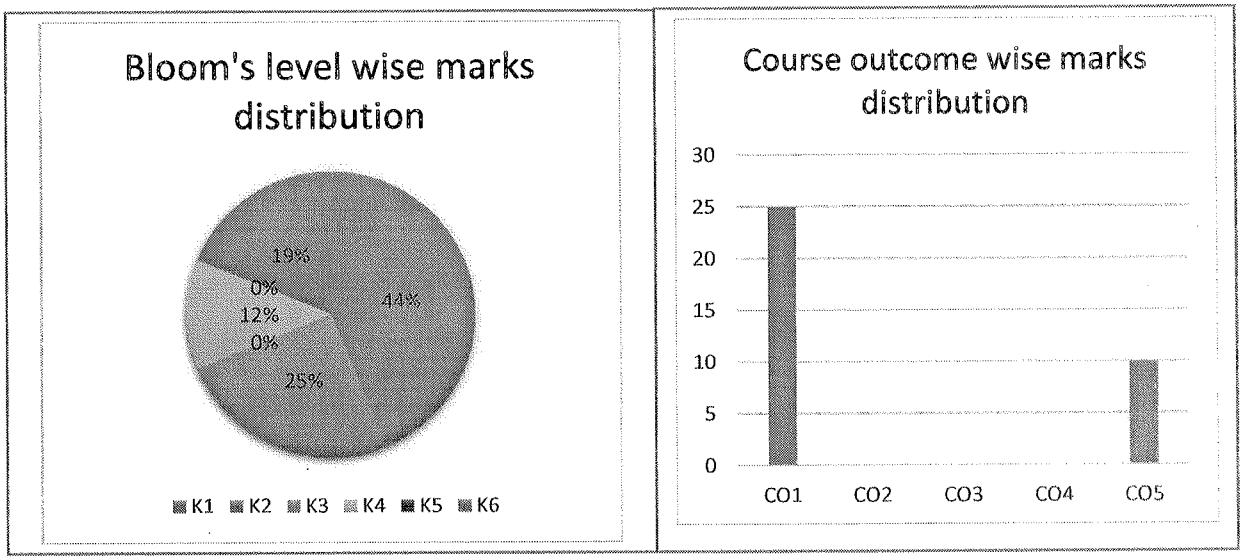
Section C

[05 Marks]

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 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.



SCHOOL OF PHARMACY	ARKA JAIN University Jharkhand | NAAC GRADE A		1st INTERNAL EXAMINATION
Program Name	BACHELOR OF PHARMACY	Program Code	B. PHARM
Course Name	Human Anatomy and Physiology-II(Practical)	Semester	2nd Semester (Group-C)
Course Code	PHM22020	Year	March 2026
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 neuroglial cells. सार: न्यूरोग्लियल कोशिकाओं पर सारांश लिखिए।	10	CO1	K1 K2	PO10

Section B

[15 + 10=25 Marks]

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 different types of taste. b.लघु प्रयोग विभिन्न प्रकार के स्वादों का पता लगाने के लिए एक प्रयोग करें।	10	CO5	K1 K4	PO2

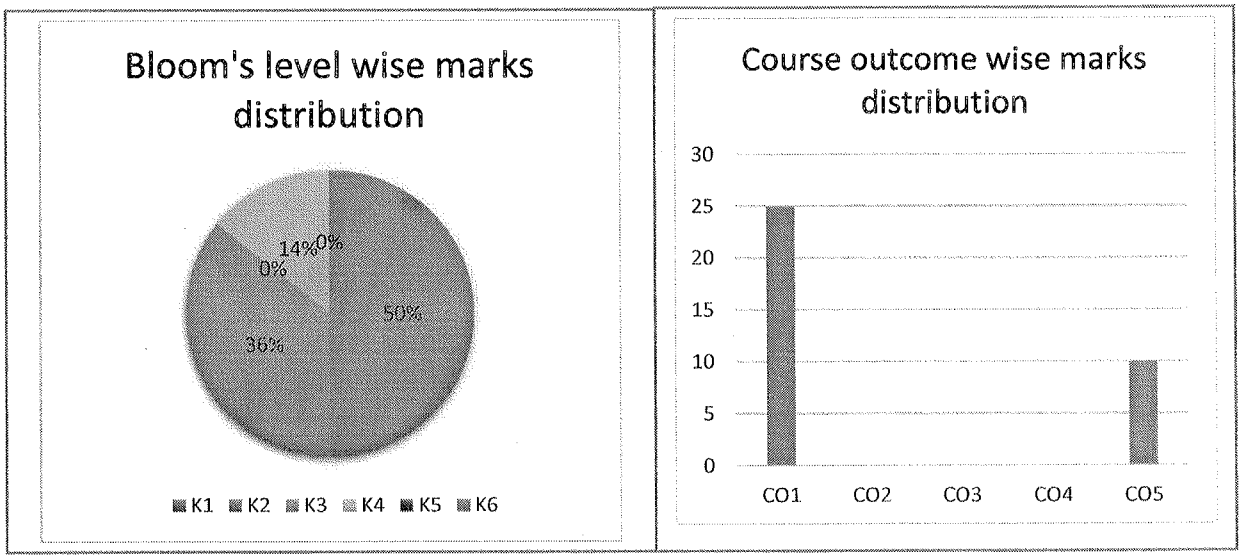
Section C

[05 Marks]

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 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.



SCHOOL OF PHARMACY	ARKA JAIN University Jharkhand NAAC GRADE A		1st INTERNAL EXAMINATION
Program Name	**BACHELOR OF PHARMACY**	Program Code	**B. PHARM**
Course Name	**Human Anatomy and Physiology-II(Practical)**	Semester	**2nd Semester (Group-D)**
Course Code	**PHM22020**	Year	**March 2026**
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 various parts of diencephalon. सार: डायएनसेफेलॉन के विभिन्न भागों पर संक्षिप्त विवरण लिखिए।	10	CO1	K1 K2	PO10

Section B

[15 + 10=25 Marks]

Q. No.	Questions	Marks	COs	KL	PO
II	**a. Major Experiment** Perform an experiment on general neurological examination. a.प्रमुख प्रयोग सामान्य तंत्रिका संबंधी परीक्षण पर एक प्रयोग करें।	15	CO2	K1 K2 K4	PO2
	b. Minor Experiment Identify the supplied model and describe it briefly. b.लघु प्रयोग दिए गए मॉडल की पहचान करें और उसका संक्षिप्त विवरण दें।	10	CO5	K2 K4	PO2

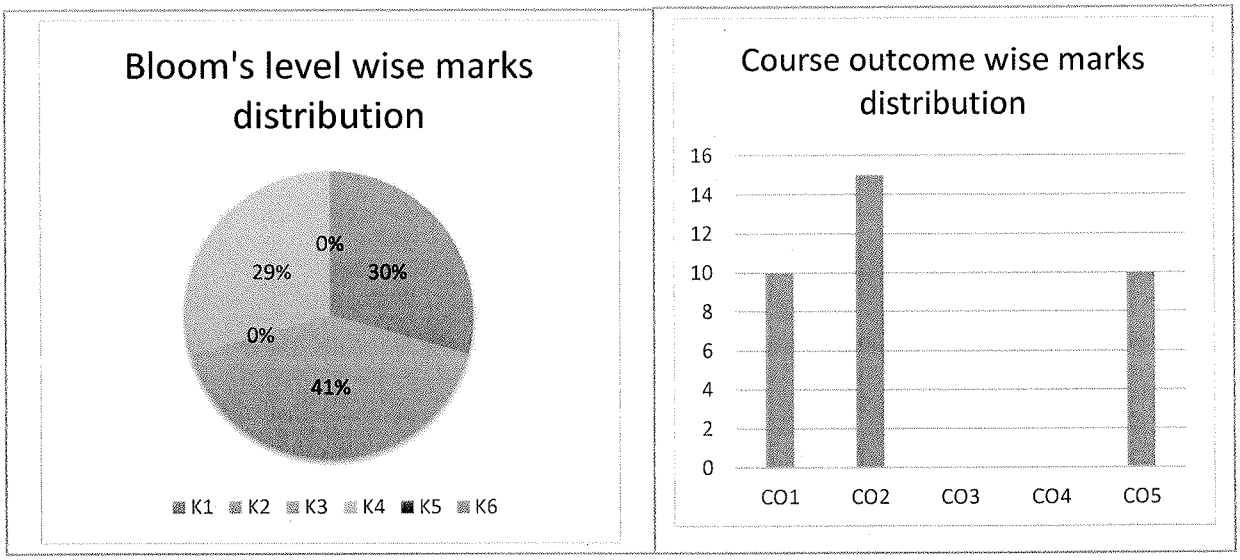
Section C

[05 Marks]

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 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.



School of Pharmacy	ARKA JAIN University Jharkhand		1ST INTERNAL EXAMINATION
Program Name	**BACHELOR OF PHARMACY**	Program Code	**B.PHARM**
Course Name	**Computer Application in Pharmacy**	Semester	**II (GROUP A)**
Course Code	**PHM22023**	Year	**March 2026**
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

SYNOPSIS **[1 x 5 = 5 Marks]**

Q. No.	Questions	Marks	COs	KL	PO
1	What are Information Retrieval (IR) tools? Explain any two IR tools used for drug information. इन्फॉर्मेशन रिट्रीवल (IR) टूल्स क्या हैं? ड्रग इन्फॉर्मेशन के लिए इस्तेमाल होने वाले किन्हीं दो IR टूल्स के बारे में बताएं।	05	CO2	K2	PO1

Section B

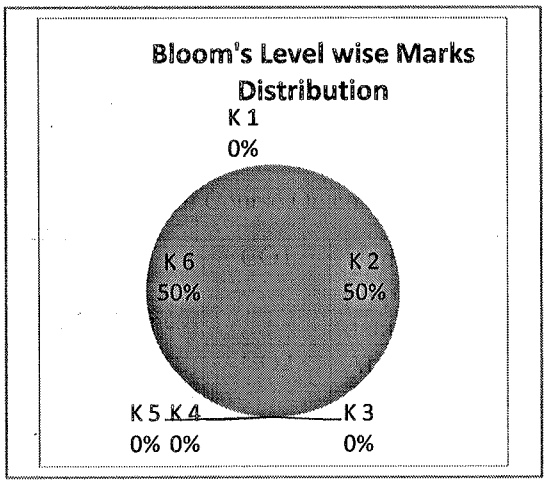
EXPERIMENT **[1 x 10 = 10 Marks]**

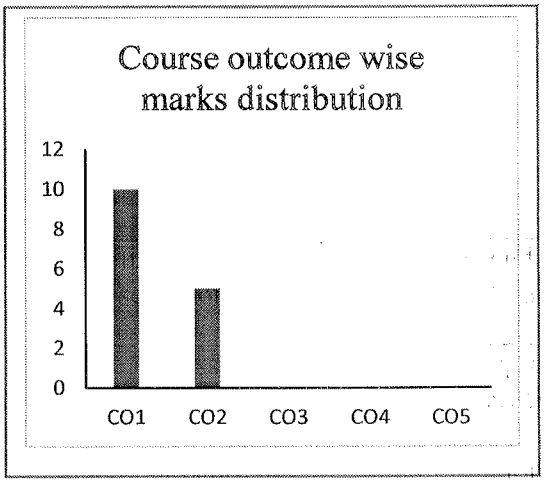
Q. No.	Questions	Marks	COs	KL	PO
1	Design a questionnaire using a word processing package to gather information about a particular database. किसी खास डेटाबेस के बारे में जानकारी इकट्ठा करने के लिए वर्ड प्रोसेसिंग पैकेज का इस्तेमाल करके एक क्वेश्चनेयर डिज़ाइन करें।	10	CO1	K6	PO1

VIVA VOCE **[5 Marks]**

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.





School of Pharmacy	ARKA JAIN University Jharkhand		1ST INTERNAL EXAMINATION
Program Name	**BACHELOR OF PHARMACY**	Program Code	**B.PHARM**
Course Name	**Computer Application in Pharmacy**	Semester	**II (GROUP B)**
Course Code	**PHM22023**	Year	**March 2026**
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

SYNOPSIS **[1 x 5 = 5 Marks]**

Q. No.	Questions	Marks	COs	KL	PO
1	Define questionnaire. Explain the sequence of questions used in constructing a questionnaire. क्वेश्चनेयर को डिफाइन करें। क्वेश्चनेयर बनाने में इस्तेमाल होने वाले सवालों का सीक्वेंस समझाएं।	05	CO1	K2	PO1

Section B

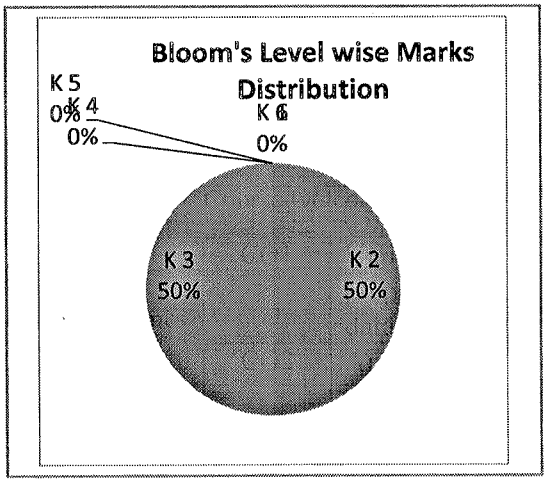
EXPERIMENT **[1 x 10 = 10 Marks]**

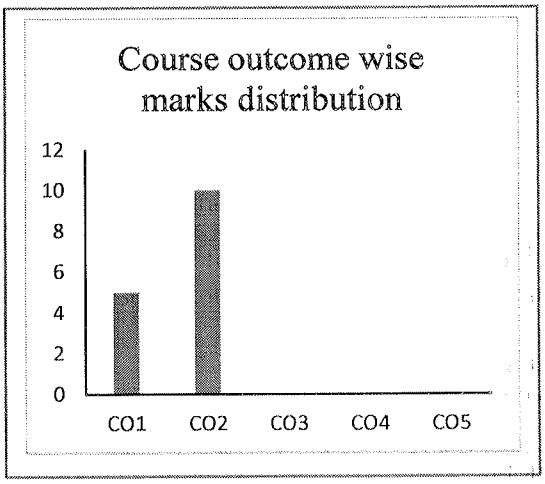
Q. No.	Questions	Marks	COs	KL	PO
1	Retrieve the information of a drug and its adverse effects using online tools. ऑनलाइन टूल्स का इस्तेमाल करके किसी दवा और उसके साइड इफ़ेक्ट्स की जानकारी पाएं।	10	CO2	K3	PO1

VIVA VOCE **[5 Marks]**

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.





School of Pharmacy	ARKA JAIN University Jharkhand		1ST INTERNAL EXAMINATION
Program Name	**BACHELOR OF PHARMACY**	Program Code	**B.PHARM**
Course Name	**Computer Application in Pharmacy**	Semester	**II (GROUP C)**
Course Code	**PHM22023**	Year	**March 2026**
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

SYNOPSIS **[1 x 5 = 5 Marks]**

Q. No.	Questions	Marks	COs	KL	PO
1	Write any four basic rules for constructing a good questionnaire. एक अच्छा क्वेश्चनेयर बनाने के लिए कोई चार बेसिक नियम लिखें।	05	CO1	K2	PO1

Section B

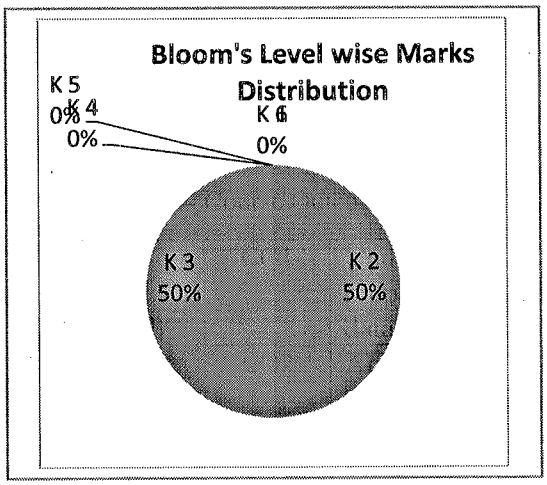
EXPERIMENT **[1 x 10 = 10 Marks]**

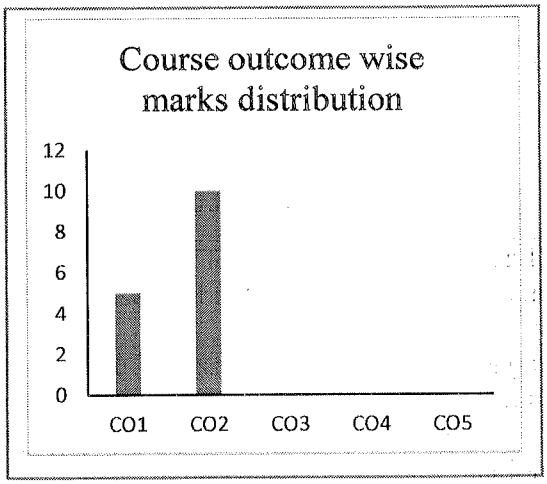
Q. No.	Questions	Marks	COs	KL	PO
1	Retrieve the information of a drug and its adverse effects using online tools. ऑनलाइन टूल्स का इस्तेमाल करके किसी दवा और उसके साइड इफ़ेक्ट्स की जानकारी पाएं।	10	CO2	K3	PO1

VIVA VOCE **[5 Marks]**

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.





School of Pharmacy	ARKA JAIN University Jharkhand		1ST INTERNAL EXAMINATION
Program Name	**BACHELOR OF PHARMACY**	Program Code	**B.PHARM**
Course Name	**Computer Application in Pharmacy**	Semester	**II (GROUP D)**
Course Code	**PHM22023**	Year	**March 2026**
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

SYNOPSIS **[1 x 5 = 5 Marks]**

Q. No.	Questions	Marks	COs	KL	PO
1	How can you retrieve information about a drug and its adverse effects using online tools? आप ऑनलाइन टूल्स का इस्तेमाल करके किसी दवा और उसके साइड इफ़ेक्ट्स के बारे में जानकारी कैसे पा सकते हैं?	05	CO2	K3	PO1

Section B

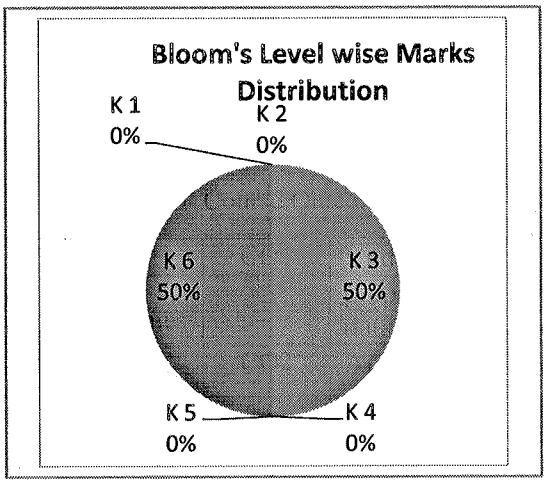
EXPERIMENT **[1 x 10 = 10 Marks]**

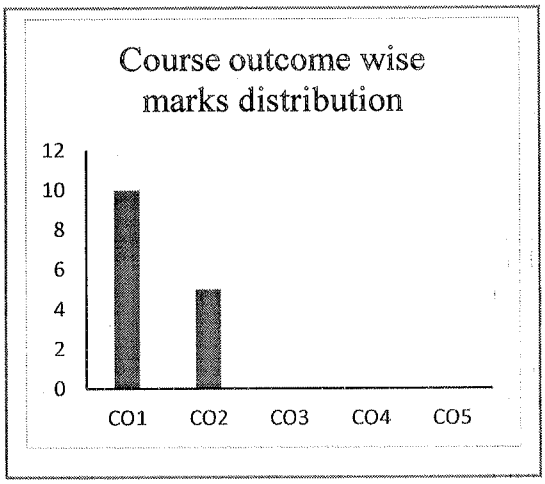
Q. No.	Questions	Marks	COs	KL	PO
1	How can you retrieve information about a drug and its adverse effects using online tools? आप ऑनलाइन टूल्स का इस्तेमाल करके किसी दवा और उसके साइड इफ़ेक्ट्स के बारे में जानकारी कैसे पा सकते हैं?	10	CO1	K6	PO1

VIVA VOCE **[5 Marks]**

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.





SCHOOL OF PHARMACY	ARKA JAIN University Jharkhand NAAC GRADE A		1st INTERNAL EXAMINATION
Program Name	**BACHELOR OF PHARMACY**	Program Code	**B. PHARM**
Course Name	**Biochemistry I (Practical)**	Semester- 2nd	**2nd Semester (Group-A)**
Course Code	PHM22021	Year-1st	**March 2026**
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 carbohydrates and its classification?	**10**	**CO3**	**K2**	**PO2**

Section B

[15 + 10=25 Marks]

Q. No.	Questions	Marks	COs	KL	PO
II	a. Major Experiment Perform an experiment on qualitative analysis of carbohydrate.	**15**	CO3	**K2**	**PO2**
	b. Minor Experiment Perform an experiment for identification test of proteins.	**10**	CO5	**K1**	PO1

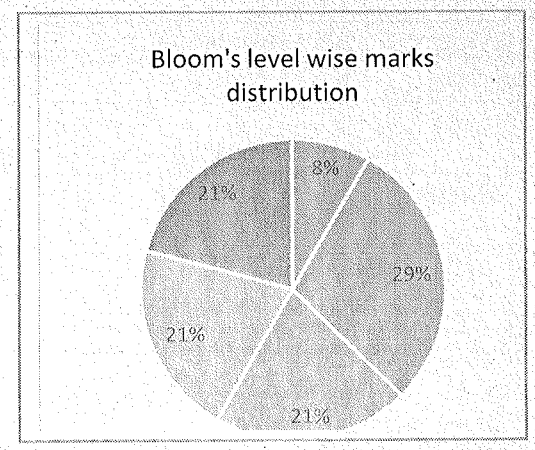
Section C

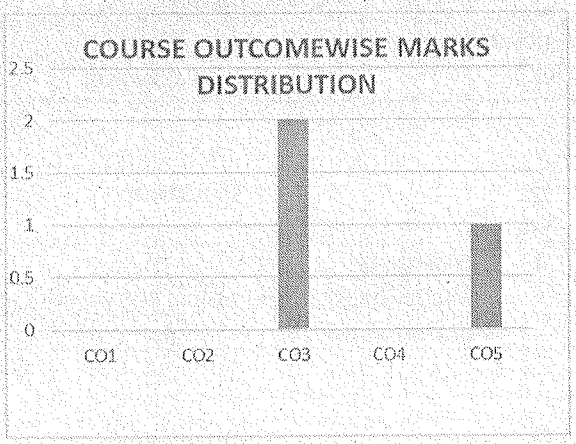
[05 Marks]

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 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	ARKA JAIN University Jharkhand NAAC GRADE A		1st INTERNAL EXAMINATION
Program Name	**BACHELOR OF PHARMACY**	Program Code	**B. PHARM**
Course Name	**Biochemistry I (Practical)**	Semester -2nd	**2nd Semester (Group-B)**
Course Code	PHM22021	Year-1st	**March 2026**
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 Enthalpy?	10	CO3	K2	PO2

Section B

[15 + 10=25 Marks]

Q. No.	Questions	Marks	COs	KL	PO
II	a. Major Experiment Perform an experiment on qualitative analysis of carbohydrate.	15	CO3	K2	PO2
	b. Minor Experiment Perform an experiment for identification test of proteins.	10	CO5	K1	PO1

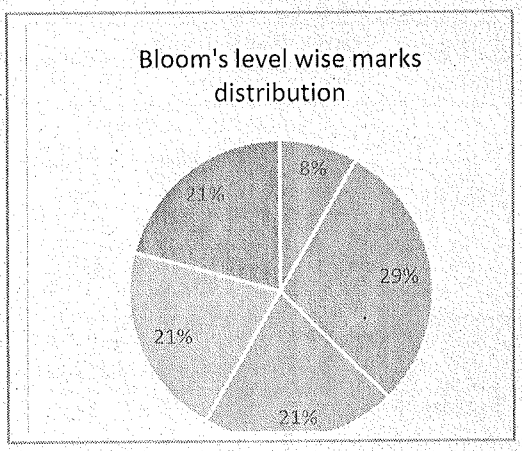
Section C

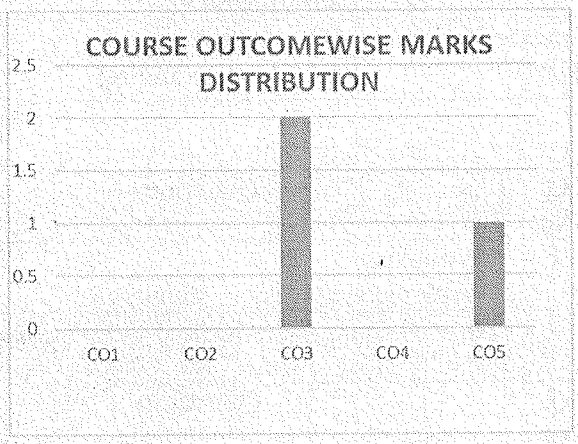
[05 Marks]

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 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	ARKA JAIN University Jharkhand | NAAC GRADE A		1st INTERNAL EXAMINATION
Program Name	**BACHELOR OF PHARMACY**	Program Code	**B. PHARM**
Course Name	**Biochemistry I (Practical)**	Semester -2nd	**2nd Semester (Group-C)**
Course Code	PHM22021	Year -1st	**March 2026**
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 ATP and ADP Cycle?	**10**	**C03**	**K1**	**PO2**

Section B

[15 + 10=25 Marks]

Q. No.	Questions	Marks	COs	KL	PO
II	a. Major Experiment Perform an experiment on qualitative analysis of carbohydrate?	**15**	CO3	**K2**	**PO2**
	b. Minor Experiment Perform an experiment on identification test for protein?	**10**	CO5	**K2**	PO1

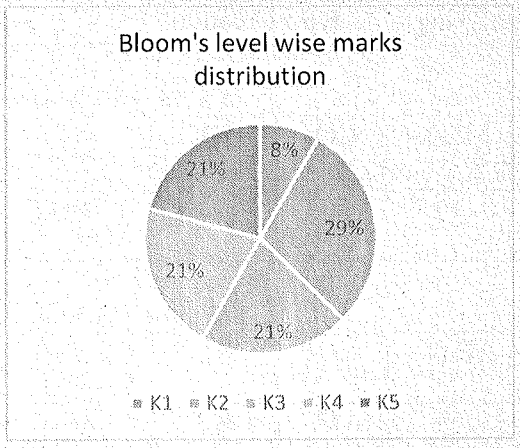
Section C

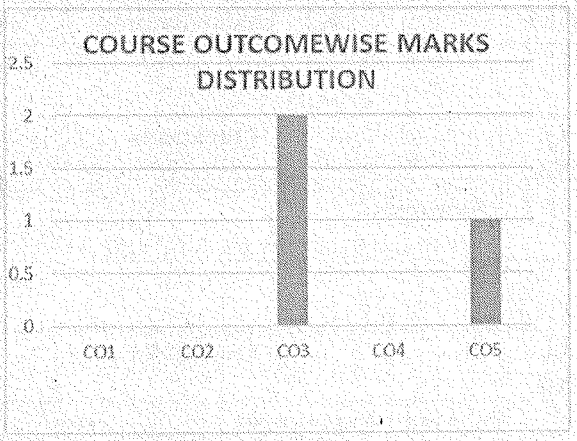
[05 Marks]

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 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	ARKA JAIN University Jharkhand NAAC GRADE A		1st INTERNAL EXAMINATION
Program Name	**BACHELOR OF PHARMACY**	Program Code	**B. PHARM**
Course Name	**Biochemistry I (Practical)**	Semester -2nd	**2nd Semester (Group-D)**
Course Code	PHM22021	Year -1st	**March 2026**
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 Gibbs free energy?	10	CO3	K1	PO2

Section B

[15 + 10=25 Marks]

Q. No.	Questions	Marks	COs	KL	PO
II	a. Major Experiment Perform an experiment on qualitative analysis of carbohydrate?	15	CO3	K2	PO2
	b. Minor Experiment Perform an experiment on identification test for protein?	10	CO5	K2	PO1

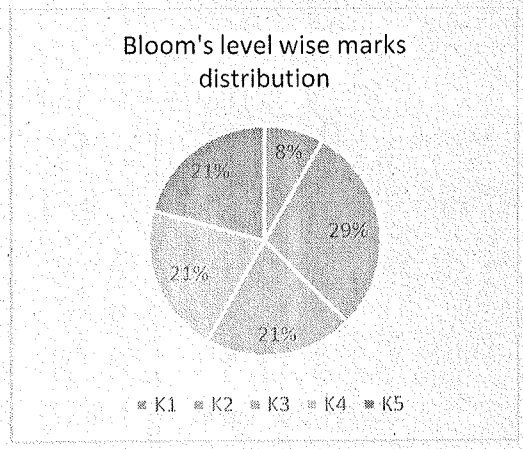
Section C

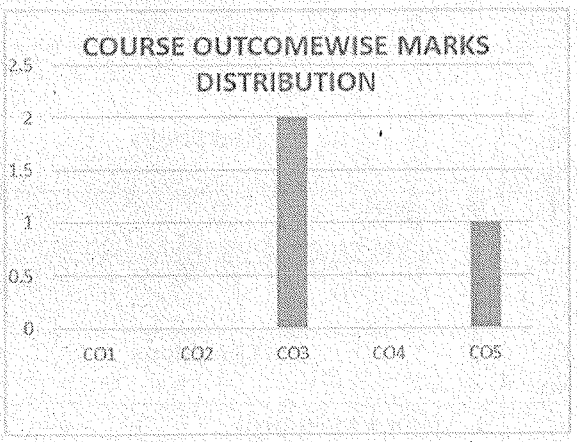
[05 Marks]

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 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	ARKA JAIN University Jharkhand | NAAC GRADE A		1ST INTERNAL EXAMINATION
Program Name	**BACHELOR OF PHARMACY**	Program Code	**B. PHARM**
Course Name	**Pharmaceutical Organic Chemistry – I (Practical)**	Semester	**2ND Semester (Group-A)**
Course Code	**PHM22021**	Year	**March 2026**
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 significance of the Ignition test and detection of Unsaturation by Baeyer's Test. इग्निशन परीक्षण के महत्व और बायर परीक्षण द्वारा असंतृप्तता का पता लगाने पर संक्षिप्त विवरण लिखें।	10	CO4	K1, K2	

Section B

[15 + 10=25 Marks]

Q. No.	Questions	Marks	COs	KL	PO
II	a. Major Perform physical state, colour, litmus test and Bromine water test for given organic compounds. दिए गए कार्बनिक यौगिकों के लिए भौतिक अवस्था, रंग, लिटमस परीक्षण और ब्रोमिन जल परीक्षण करें।	15	CO4	K3, K4, K5	
	b. Minor Perform $KMnO_4$ test and flame test for given organic compounds. दिए गए कार्बनिक यौगिकों के लिए $KMnO_4$ परीक्षण और फ्लेम परीक्षण करें।	10	CO4	K3, K4, K5	

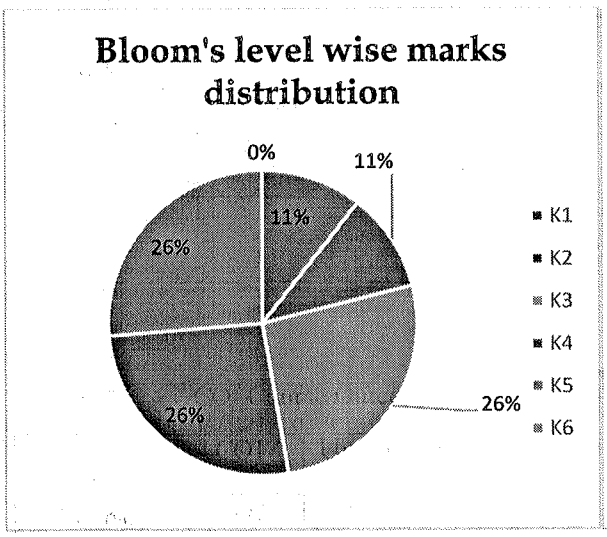
Section C

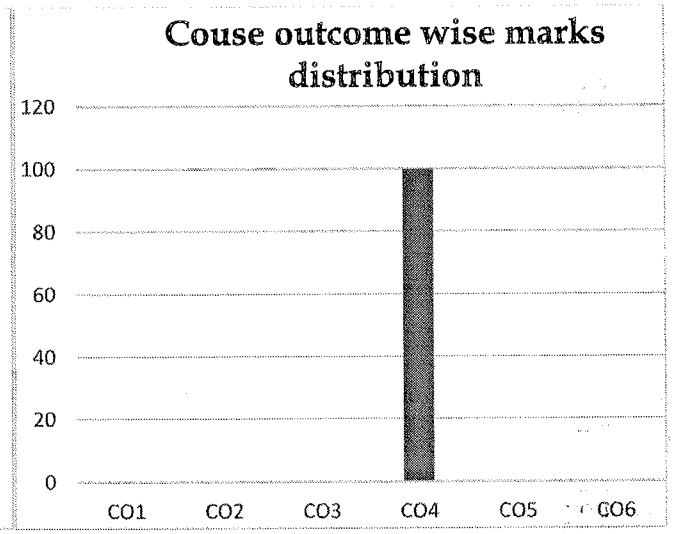
[05 Marks]

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 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





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 Organic Chemistry – I (Practical)**	Semester	**2ND Semester (Group-B)**
Course Code	**PHM22021**	Year	**March 2026**
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 principle and procedure for the preparation of Lassaigne's Test. लसैनीज परीक्षण के सिद्धांत और तैयारी की प्रक्रिया पर संक्षेप लिखें।	10	CO1	K1, K2	

Section B

[15 + 10=25 Marks]

Q. No.	Questions	Marks	COs	KL	PO
II	a. Major Perform to detect extra elements for Nitrogen and Sulphur. नाइट्रोजन और सल्फर के लिए अतिरिक्त तत्वों का पता लगाने के लिए कार्रवाई करें।	15	CO1	K3, K4	
	b. Minor Perform to detect extra elements for Halides. हैलाइड्स में अतिरिक्त तत्वों का पता लगाने के लिए परीक्षण करें।	10	CO1	K3, K4,	

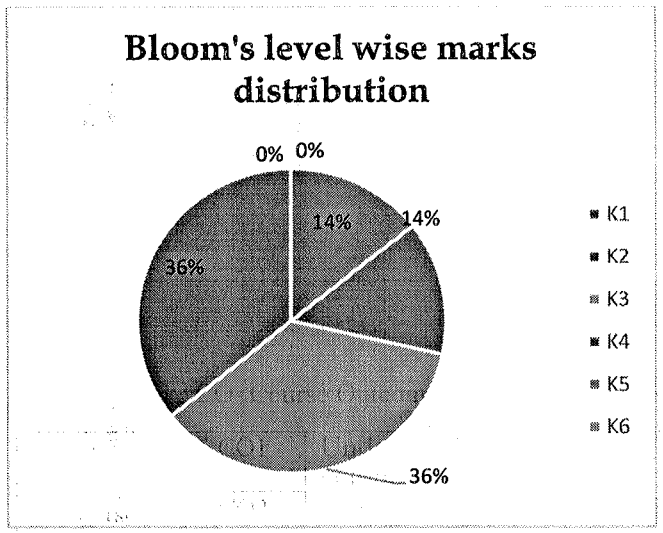
Section C

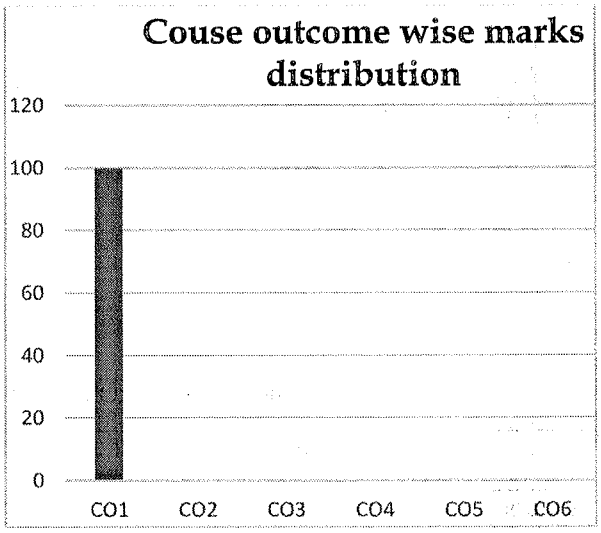
[05 Marks]

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 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





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 Organic Chemistry – I (Practical)**	Semester	**2ND Semester (Group-C)**
Course Code	**PHM22021**	Year	**March 2026**
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 solubility test using water and $NaHCO_3$ critical for the initial classification of a compound. किसी यौगिक के प्रारंभिक वर्गीकरण के लिए जल और $NaHCO_3$ का उपयोग करके घुलनशीलता परीक्षण पर संक्षेप लिखें।	**10**	CO4	K1, K2	

Section B

[15 + 10=25 Marks]

Q. No.	Questions	Marks	COs	KL	PO
II	a. Major Perform solubility test for organic compound (Neutral compound). जैविक यौगिक (तटस्थ यौगिक) के लिए घुलनशीलता परीक्षण करें।	**15**	CO4	K3, K4	
	b. Minor Perform functional group test for phenol. फिनोल के लिए सामूहिक परीक्षण करें।	**10**	CO1	K3, K4, K5	

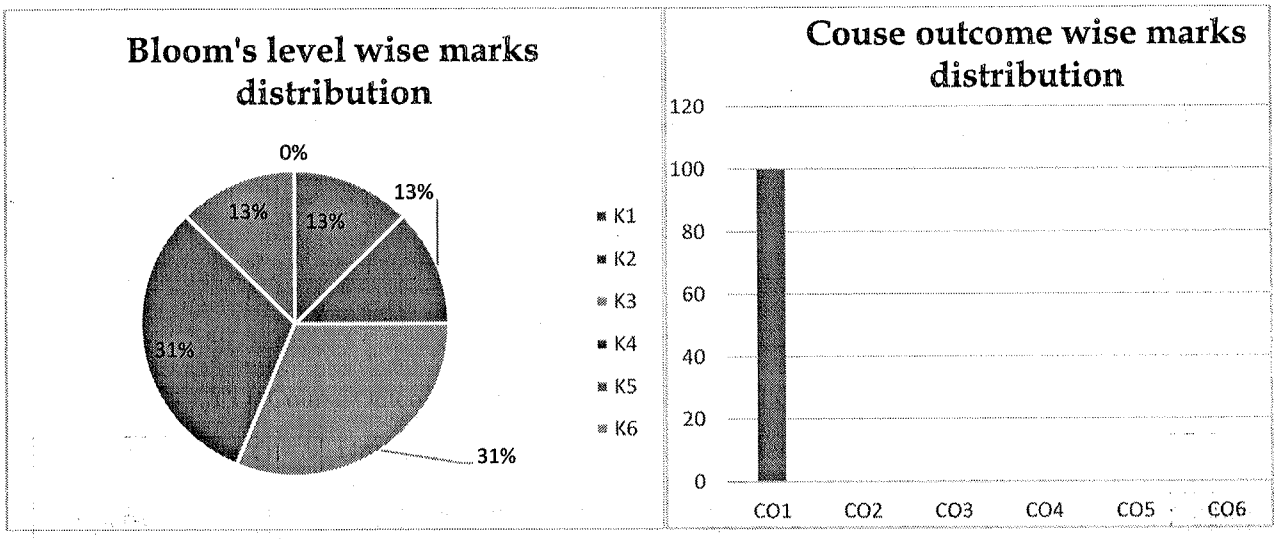
Section C

[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 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



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 Organic Chemistry – I (Practical)**	Semester	**2ND Semester (Group-D)**
Course Code	**PHM22021**	Year	**March 2026**
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 classification of compound based on its solubility in water, NaOH, and HCl. पानी, NaOH और HCl में घुलनशीलता के आधार पर यौगिकों के वर्गीकरण पर संक्षिप्त विवरण लिखें।	10	CO4	K1, K2	

Section B

[15 + 10=25 Marks]

Q. No.	Questions	Marks	COs	KL	PO
II	a. Major Perform solubility test for organic compound (Acidic compound). जैविक यौगिक (अम्लीय यौगिक) के लिए घुलनशीलता परीक्षण करें।	15	CO4	K3, K4	
	b. Minor Perform solubility test for organic compound (Basic compound). कार्बनिक यौगिक (मूलभूत यौगिक) के लिए घुलनशीलता परीक्षण करें।	10	CO4	K3, K4	

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 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