



ARKA JAIN
University
Jharkhand



END SEM EXAMINATION
School of Health and allies Science

Program		Bachelor of Science (Biotechnology)	
Subject Name	Entrepreneurship and Small Business		IIInd
			Semester Year June 2024
<ul style="list-style-type: none"> • Start writing from 2nd page onwards; don't Write on the 1st Page Backside • Answer all Questions of Section A (Compulsory) • Answer Any Four out of Six of Section B • Answer Any Two out of Four 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> 			
Time: 1.5 Hour Max. Marks : 35			

Section A (Each question Carry 01 Mark from Q1-i to v) – 05 Marks			
Q. N1	QUESTIONS	Marks	COs KL
i	These are governed by social objective more than economic objective a. Co-operative society b. Joint stock company c. Partnership d. HUF	01	CO2 K2
ii	Characteristics of good business opportunity is/are a. wide market gap between demand and supply b. reliable return c. less gap between demand and supply d. Both a and b	01	CO4 K1
iii	They think newer, better and more economical ideas a. Innovative entrepreneur b. Imitating entrepreneur c. Fabian entrepreneur d. Drone entrepreneur	01	CO1 K2
iv	Industry consists of a. All firms producing similar product b. Only one firm having different products c. All the firms producing different products d. None of these	01	CO2 K3
v	Program for developing entrepreneurial skill is a. EVP b. EDP c. EPM d. EPP	01	CO3 K1

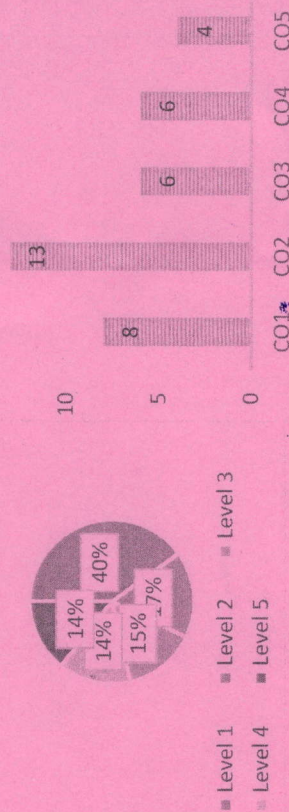
Section B (Answer any FIVE out of SIX) – 10 Marks (Each question Carry 02 Marks)			
No.	QUESTIONS	Marks	COs
2	Define Fabian Entrepreneurship.	02	1
3	Write two factors which affects size of a Plant.	02	2
4	Define Bioethics and Biosafety.	02	6
5	What is biosensors? Write applications of biosensor.	02	5
6	What is Partnership? Write two merits of Partnership.	02	2
7	What is DIC? Write any two function of DIC	02	3
Section C (Answer any FOUR out of FIVE) – 20Marks (Each question Carry 05 Marks)			
No.	QUESTIONS	Marks	COs
8	Differentiate between Entrepreneur and Intrapreneur	05	1
9	Describe s Importance of Entrepreneurship Development Programme.	05	3
10	Describe features of Sole proprietorship.	05	2
11	What are nutraceuticals? Is there any growing demand for the product?	05	4
12	Describe Merits of Joint stock company.	05	2

CO3	Explain role of different Entrepreneurship development programs	K1 : Remembering K2 : Understanding K3 : Applying K4 : Analysing K5 : Evaluating K6 : Creating
CO4	Understand the differences between business ideas and opportunities	
CO5	Attain knowledge about project identification and appraisal.	
CO6	Acquire knowledge about small scale industries	
Knowledge Level (KL)		

GRAPHICAL REPRESENTATION

Bloom's Level wise Marks Distribution

COURSE OUTCOME WISE MARKS DISTRIBUTION



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

CO1	Understand entrepreneurship and entrepreneur and their characteristics
CO2	Attain knowledge about various types of business organization and size of business organization

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END SEM EXAMINATION
School of Health & Allied Science

Program **Bachelor of Science (Biotechnology)**

Subject Name **Genetics**

Semester **II**

Year **June 2024**

- Start writing from 2nd page onwards; don't Write on the 1st Page Backside
- Answer all Questions of Section A (Compulsory)
- Answer Any Four out of Six of Section B
- Answer Any Two out of Four of Section C

Time: 3 Hour
Max. Marks : 60

- 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.

Section A (Each question Carry 01 Mark from Q1-i to x) – 10 Marks				
Q. N 1	QUESTIONS	Marks	COs	KL
i	The F2 phenotypic ratio monohybrid cross studied by Mendel is a. 1:1 b. 2:1 c. 3:1 d. 4:1	01	CO2	KL2
ii	The concept of Natural selection was given by a. Charles Darwin b. Lamarck c. Mendel d. Weismann	01	CO1	KL1
iii	Turner's Syndrome is characterized by chromosome a. 45 b. 46 c. 47 d. 48	01	CO1	KL1
iv	The crossing of F1 to either of the parents is known as a. Test cross b. Back cross c. F1 cross d. All of the above	01	CO2	KL2
V	One gen-enzyme hypothesis was proposed by a. Arthur Kornberg b. Beadle and Tatum c. Har Govind Khorana d. Jacob and Monod	01	CO3	KL3

vi	Damage and Error in DNA causes a. Mutation b. DNA Repair c. Transcription d. Translation	01	CO2	KL2
vii	Which of the chemical mutagen affect only replicating DNA a. Acridine dye b. Alkylating Agent c. Deaminating agent d. Base analog	01	CO1	KL1
viii	If Adenine is replaced from Guanine then the Mutation is a. Transition b. Transversion c. Transcription d. Frameshift Mutation	01	CO1	KL1
ix	Colchicine stops mitotic cell division at which stage? a. Prophase b. Metaphase c. Anaphase d. Telophase	01	CO2	KL2
x	The most widely used model for studying developmental biology a. <i>E.coli</i> b. <i>Sachromyces cerevisiae</i> c. <i>Coenorhabditis elegans</i> d. <i>Neurospora crassa</i>	01	CO3	KL3

Section B (Answer any FOUR out of SIX) – 20 Marks
(Each question Carry 5 Marks)

Q. No.	QUESTIONS	Marks	COs	KL
2	Write short notes on: i. LINE ii. SINE	05	CO2	KL2
3	Explain the morphology of chromosomes corresponding to different positions of centromere.	05	CO1	KL1
4	What are Lethal genes? With example explain the lethal genes present in plants and animals.	05	CO1	KL1
5	Explain about the environmental factors that affect sex determination in living organism. (any two)	05	CO2	KL2
6	What is AMES test? Explain the purpose and procedure of this test.	05	CO3	KL3

7	Explain the concept of Monosomy and Nullisomy.	05	CO2	KL2
Section C (Answer any TWO out of FOUR) – 30Marks (Each question Carry 15 Marks)				
Q. No.	QUESTIONS	Marks	COs	KL
8	What is Cell Cycle? Explain the different Check Points in the Cell cycle progression.	15	CO2	KL2
9	Describe the Genome organisation of a Prokaryotic Cell.	15	CO1	KL1
10	What is Cytoplasmic inheritance? Explain the concept with suitable example.	15	CO1	KL1
11	What is Polyploidy? Explain the phenotypic effect of polyploidy.	15	CO2	KL2

CO- Course Outcomes,

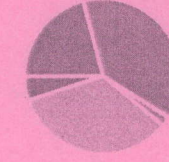
KL- Knowledge Level,

PO – Program Outcome

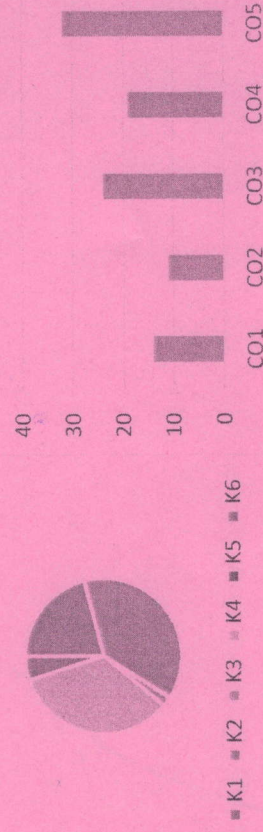
CO1	Identify various tools and have basic implementation skills.
CO2	Understand of various aspect of Internet of Things (IoT)
CO3	Use real IoT protocols for communication.
CO4	Analyze the working of an IoT device with a Cloud Computing infrastructure.
CO5	Evaluate & verify the IoT data in the cloud and in between cloud providers.
Knowledge Level (KL)	K1 : Remembering
	K2 : Understanding
	K3 : Applying
	K4 : Analysing
	K5 : Evaluating
	K6 : Creating

GRAFICAL REPRESENTATION

Bloom's Level wise Marks Distribution



Course Outcome Wise Marks Distribution

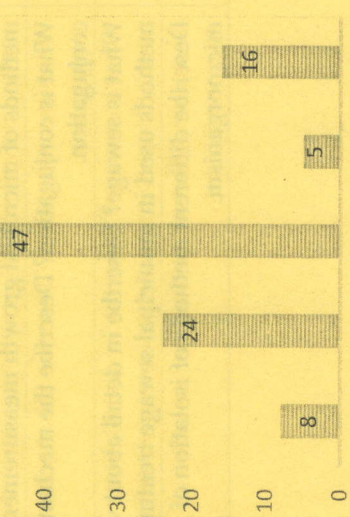
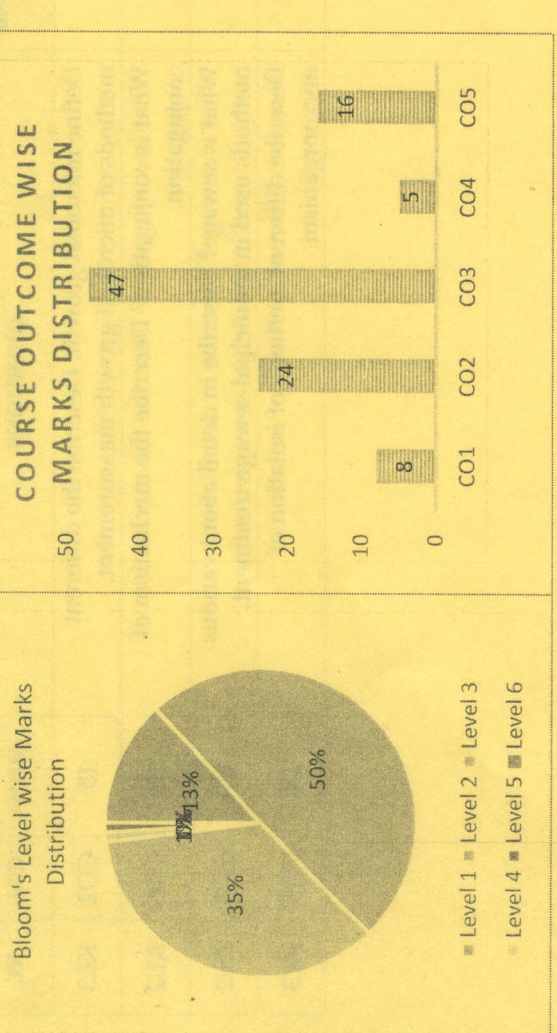


Program	Bachelor of Science (Biotechnology)	
Subject Name	General Microbiology	Semester II
		Year June 2024
Time: 3 Hour	<ul style="list-style-type: none"> Start writing from 2nd page onwards; don't Write on the 1st Page Backside Answer all Questions of Section A (Compulsory) Answer Any Four out of Six of Section B Answer Any Two out of Four 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 <u>Unfair Means</u> and will <u>Result</u> in the <u>Cancellation</u> of the <u>Papers</u>. 	

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

Q. N1	QUESTIONS	Marks	COs	KL
i	In which stage of the growth in bacteria, cells are dividing regularly by binary fission and are growing by geometric progression a. Log b. Lag c. Stationary d. None of these	01	CO2	KL1
ii	Which of the following is/are vapor-phase disinfectant/s? a) Formaldehyde b) Ethylene oxide c) Both of these d) None of these	01	CO2	KL2
iii	The main feature of prokaryotic organism is a) Absence of locomotion b) Absence of nuclear envelope c) Absence of nuclear material d) Absence of protein synthesis	01	CO1	KL1
iv	The organisms which can use reduced inorganic compounds as electron donors are known as a) Chemotrophs b) Organotrophs c) Lithotrophs d) Phototrophs	01	CO1	KL2
V	Which of the following is produced by fermentation of milk?	01	CO3	KL2

CO- Course Outcomes,	KL- Knowledge Level,	PO – Program Outcome
CO1	Understand the diversified branches of microbiology	
CO2	Describe the theoretical and practical aspects of microbial growth and physiology	
CO3	Define the morphology and physiological characteristics of different groups of microorganisms	
CO4	Understand the process of virus cultivation, phages and bacterial/ yeast genetics	
CO5	Acquire detailed knowledge about genome of various types of microorganism	
Knowledge Level (KL)	K1 : Remembering K2 : Understanding	K3 : Applying K4 : Analysing K5 : Evaluating K6 : Creating



6	What is food intoxications? Write the different microorganism used caused food intoxications.	05	CO2	KL2
7	Write short notes on a) Transduction b) Generation time c) Fermented Food d) Enriched media e) Lag phase	05	CO3	KL1
Section C (Answer any TWO out of FOUR) - 30 Marks (Each question Carry 15 Marks)				
Q. No.	QUESTIONS	Marks	COs	KL
8	Define microbial growth. Describe the different methods of microbial growth measurement.	15	CO2	KL3
9	What is conjugation? Describe the mechanism of conjugation.	15	CO5	KL2
10	What is sewage? Describe in detail about various methods used in municipal sewage treatment.	15	CO3	KL2
11	Describe different methods of isolation of microorganism.	15	CO3	KL3

vi	a) Yogurt b) Sauerkraut c) Tempeh d) Kombucha Iodophores are mixture of a) iodine and Aldehydes b) iodine and surface active agents c) iodine and alcohols d) iodine and phenols	01	CO2	KL5
vii	The process by which foreign DNA is introduced into bacteria from environment directly is called a) Transduction b) Transformation c) Replication d) Conjugation	01	CO5	KL4
viii	Teichoic acids and Teichuronic acids are found in a) Gram positive bacteria b) Gram negative bacteria c) Fungi d) None of these	01	CO3	KL2
ix	Three kingdoms classification was given by a) Carl Woese b) Robert Whittaker c) Ernst Haeckel d) Carolus Linnaeus	01	CO1	KL1
x	Which of the following is used as a solidifying agent for media? a) Silica Gel b) Peptone c) Agar d) Yeast extract	01	CO2	KL2
Section B (Answer any FOUR out of SIX) - 20 Marks (Each question Carry 5 Marks)				
Q. No.	QUESTIONS	Marks	COs	KL
2	What are Koch's postulates? Write the scopes of microbiology.	05	CO1	KL1
3	What is sterilization? Explain physical methods of sterilization.	05	CO3	KL3
4	Describe the different methods of food preservation.	05	CO3	KL2
5	What is endospore? Draw a labelled diagram of endospore.	05	CO4	KL2


Program Bachelor of Science (Biotechnology)

Subject Name Environmental Studies

Semester II
Year June 2024

- Start writing from 2nd page onwards; don't write on the 1st Page Backside
- Answer all Questions of Section A (Compulsory)
- Answer Any Four out of Six of Section B
- Answer Any Two out of Four of Section C

 Time: 1.5 Hour
 Max. Marks : 35

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.

Section A (Each question Carry 01 Mark from Q1-i to v) - 05 Marks				
Q. N1	QUESTIONS	Marks	COs	KL
i	The following is the correct food chain of grassland ecosystem a. Grass → Grasshopper → Frog → Snake → Hawk b. Grass → Grasshopper → Frog → Hawk → Snake c. Grass → Frog → Grasshopper → Snake → Hawk d. Grass → Grasshopper → Snake → Frog → Hawk	01	C02	KL2
ii	Which of the following area is the hotspot of India? a. Sunderbans Deltas b. Western Ghats c. Eastern Ghats d. Gangetic Plain	01	CO2	KL2
iii	Which of the following agency published the Red data book? a. IUCN b. NEERI c. NWAP d. CITES	01	CO2	KL2
iv	Examples of In-situ conservation a. National parks b. Sanctuaries and Reserve forests c. Biosphere Reserves	01	CO2	KL2

v	d. All the above	01	C02	KL2
	CPCB means			
	a. Committee of Pollution Control Board			
	b. Central Pollution Control Board			
	c. Central Population Control Board			
	d. Committee of Population Control Board			

Section B (Answer any FIVE out of SIX) – 10 Marks
(Each question Carry 02 Marks)

Q. No.	QUESTIONS	Marks	COs	KL
2	What is a Biosphere reserve? State the major issues of Biodiversity.	02	C02	KL2
3	Explain the term Sustainability? Write the goals of sustainable development.	02	C02	KL2
4	Define Ecosystem. Describe the structural components of an Ecosystem.	02	C02	KL2
5	What is in-situ and ex-situ conservation? Write one example of each.	02	C02	KL2
6	Give a brief account of renewable and non-renewable energy resources with examples.	02	C02	KL2
7	What is the role of Judiciary in Environment Protection?	02	C02	KL2

Section C (Answer any FOUR out of FIVE) – 20Marks
(Each question Carry 05 Marks)

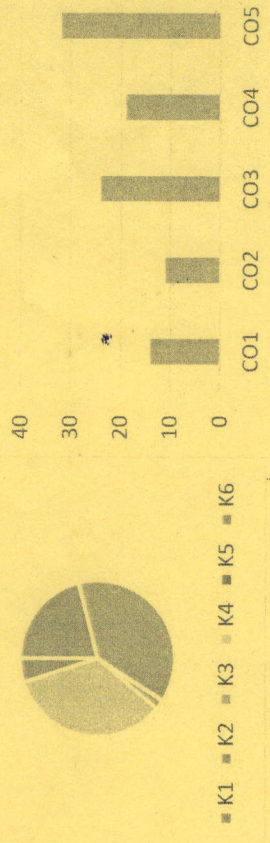
Q. No.	QUESTIONS	Marks	COs	KL
8	What are Ambient Air Quality standards? Explain its role in Environment Monitoring?	05	C02	KL2
9	Write a short note on Logistic and Exponential population growth.	05	C02	KL2
10	What is Wild life protection Act, 1972? Write its salient features.	05	C02	KL2
11	What do you mean by sustainable development? Describe in detail two examples of sustainable development.	05	C02	KL2

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

CO1	Identify various tools and have basic implementation skills.
CO2	Understand of various aspect of Internet of Things (IoT)
CO3	Use real IoT protocols for communication.
CO4	Analyze the working of an IoT device with a Cloud Computing infrastructure.
CO5	Evaluate & verify the IoT data in the cloud and in between cloud providers.
Course	
Outcomes	
Knowledge Level (KL)	
	K1 : Remembering K3 : Applying K5 : Evaluating
	K2 : Understanding K4 : Analysing K6 : Creating

GRAFICAL REPRESENTATION

Bloom's Level wise Marks Distribution **Course Outcome Wise Marks Distribution**





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END SEM EXAMINATION
School of Health & Allied Science

Program **Bachelor of Science (Biotechnology)**

Subject Name **Plant Physiology**

Semester **II**

Year **June 2024**

• Start writing from 2nd page onwards; don't write on the 1st Page Backside

• Answer all Questions of Section A (Compulsory)

• Answer Any Four out of Six of Section B

• Answer Any Two out of Four of Section C

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Time: 3

Hour Max.

Marks : 60

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

Q. N1	QUESTIONS	Marks	COs	KL
i	Diffusion pressure is a. directly proportional to conc. of diffusing particles b. inversely proportional to conc. of diffusing particles c. independent of conc. of diffusing particles d. None of the above	01	CO2	KL2
ii	Chlorosis of leaves due to nitrogen deficiency begins at first a. unfolded leaves b. young leaves c. older leaves d. All of above	01	CO1	KL2
iii	Nickel deficiency in plants results in a. necrosis of leaves b. Chlorosis of leaves c. Both d. None	01	CO3	KL2
iv	Closure of stomata of normal plants can be induced by a. IAA b. ABA c. GA3 d. All of above	01	CO1	KL2
V	Green algae and higher plants contain a. Chl.A and chlorophyll b	01	CO2	KL2

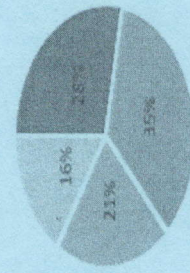
Section C (Answer any TWO out of FOUR) – 30Marks (Each question Carry 15 Marks)				
Q. No.	QUESTIONS	Marks	COs	KL
8	What is nutrients? Describe the role of different nutrients. Write the disease associated with deficiency of nutrients.	15	CO2	KL2
9	Explain different types of Photosystem present in plants.	15	CO2	KL2
10	What is Nitrogen fixation and describe the Symbiotic nitrogen fixations.	15	CO2	KL2
11	Discuss Distribution, Transport and effects of auxins.	15	CO2	KL2

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

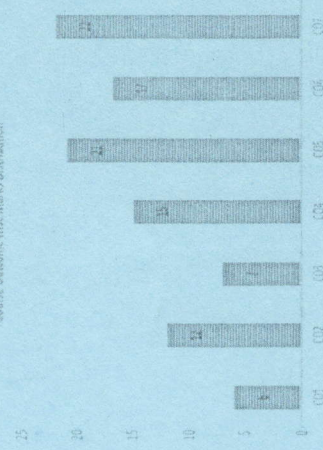
CO1	Different types of cells, differentiation and organization
CO2	Significance of diffusion, osmosis, plasmolysis, imbibitions, Guttation,transpiration
CO3	Nitrogen cycle and assimilation in plants, nitrogen Fixation
CO4	Mechanism of uptake of nutrients, mechanism of food transport
CO5	Growth and growth hormone and their role
CO6	primary structure of shoot; root, secondary growth, leaf anatomy.
CO7	Carbon metabolism: photosynthesis and photorespiration mechanism
Knowledge Level (KL)	K1 : Remembering K3 : Applying K5 : Evaluating K2 : Understanding K4 : Analysing K6 : Creating

GRAFICAL REPRESENTATION

Bloom's Level wise Marks Distribution



Course Outcome wise Marks Distribution



vi	b. chlorophyll a and chlorophyll c c. Chl.A and chlorophyll d d. All the above	01	CO2	KL2
vii	Tunica corpus theory is connected with a. root apex b. Shoot apex c. root cap d. secondary growth What is true about a monocot leaf a. reticulate venation b. absence of bulliform cells from epidermis c. mesophyll not differentiated into palisade and spongy tissues d. well differentiated mesophyll	01	CO1	KL4
viii	Which meristem helps in increasing girth a. Apical c. lateral d. Primary stem	01	CO2	KL3
ix	Auxin is synthesized mainly in a. Roots b. Merismatic region of plants c. Shoots d. None of the above	01	CO4	KL4
x	In photosynthesis ultimate source of electron is a. Chl.a b. water c. pheophytin d. Antennae	01	CO1	KL2

Section B (Answer any FOUR out of SIX) – 20 Marks

(Each question Carry 5 Marks)

Q. No.	QUESTIONS	Marks	COs	KL
2	Write differences between apical and lateral meristem.	05	CO2	KL2
3	Draw a well labelled diagram of Transverse section of monocot stem.	05	CO1	KL2
4	Discuss the role of cytokinin hormone.	05	CO3	KL1
5	What is Plasmolysis? Describe stages of plasmolysis and write a note on its significance.	05	CO2	KL3
6	Draw a well labelled diagram of Open and Closed Stomata.	05	CO4	KL2
7	Explain role and deficiency symptoms of Phosphorus.	05	CO1	KL4