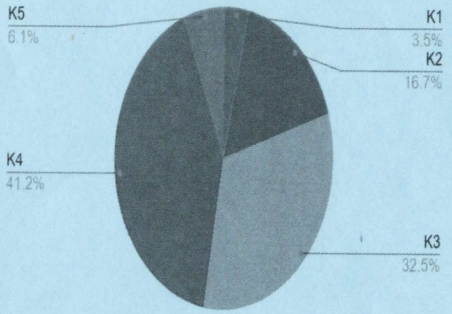
CO- Course Outcomes, **KL**- Knowledge Level, **PO** – Program Outcome

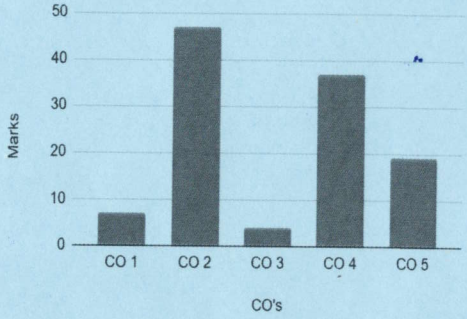
Course Outcomes	CO1	Evaluate the effectiveness of different surgical instruments in various surgeries.
	CO2	Analyze the role of surgical instruments in ensuring sterile environments and patient safety.
	CO3	Recall the names, uses, and maintenance procedures for common surgical instruments.
	CO4	Apply knowledge of surgical instrumentation to assist in clinical settings.
	CO5	Understand the fundamentals of surgical procedures and their instrumentation.

GRAPHICAL REPRESENTATION

Bloom's Level Wise Marks Distribution



Course Outcome Wise Mark Distribution



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School of Health & Allied Sciences

Program	**B.Sc. Anaesthesia and Operation Theatre Technology (Hons.)**		
Subject Name	**Introduction to Surgery and Instrumentation-Theory**	**Session**	**Even, 2024-2025**
Semester	**II**	**Year**	**August, 2025**
Time: 3 Hour Max. Marks : **70**	• 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 **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 Mark from Q1-i to xii) – 12 Marks

Q. N 1	QUESTIONS	Marks	COs	KL
i	Name the department responsible for sterilization in hospitals.	01	CO3	K1
ii	What is the full form of ETO?	01	CO5	K2
iii	What does PPE stand for?	01	CO5	K2
iv	Which robotic system part does the surgeon operate?	01	CO2	K4
v	What color bin is used for soiled surgical glove disposal?	01	CO5	K2
vi	Which instrument is used for clamping small blood vessels?	01	CO2	K4
vii	What is the minimum temperature required for dry heat sterilization?	01	CO5	K2
viii	Name the robotic surgical system most commonly used worldwide.	01	CO3	K1
ix	What is the function of artery forceps?	01	CO5	K2
x	Name the method of hand hygiene before a surgical procedure	01	CO3	K1

xi	Which solution is commonly used for surgical hand scrubbing?	01	CO2	K4
xii	What is the standard time for steam sterilization at 121°C?	01	CO3	K1

Section B (Answer any FOUR out of SIX) – 28 Marks
(Each question Carry 07 Marks)

Q. No.	QUESTIONS	Marks	COs	KL
2	What is debulking surgery, what is its primary purpose, and which instruments are commonly used in this procedure?	07	CO5	K2
3	Explain the various methods of sterilization used in the Operation Theatre.	07	CO4	K3
4	Define retractors and discuss their classification. Describe the types and uses of retractors with suitable examples.	07	CO2	K4
5	Differentiate between Mosquito Forceps and Large Artery Forceps in terms of size, structure, and clinical use. Explain their specific roles in surgical procedures	07	CO5	K2
6	Identify the major categories of surgical instruments and explain any two with their functions in detail.	07	CO2	K4
7	Describe surgical clamps in detail, including their structure, function, and applications with an example.	07	CO1	K5

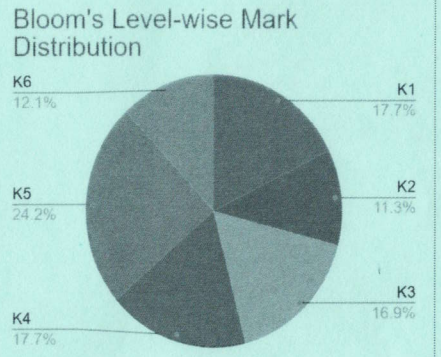
Section C (Answer any TWO out of FOUR) – 30 Marks
(Each question Carry 15 Marks)

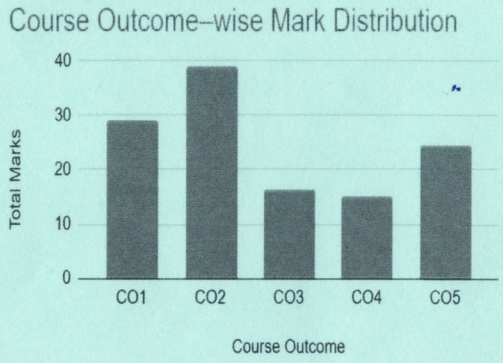
Q. No.	QUESTIONS	Marks	COs	KL
8	Define fabrication in the context of healthcare. Discuss the process, materials, and applications of fabrication in designing surgical instruments or biomedical devices. Highlight its significance in improving patient care.	15	CO4	K3
9	Describe in detail the role and functions of the Central Sterile Supply Department (CSSD) in Operation Theatre practices.	15	CO2	K4
10	Explain the working principles of robotic surgical instruments. Describe the main components of a robotic surgical system and highlight their advantages in modern surgical practice.	15	CO2	K4
11	Describe the surgical hand scrubbing technique in detail. Explain its steps, purpose, and the importance of following aseptic principles during the procedure.	15	CO4	K3

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

Course Outcomes	CO1	Develop a step-by-step plan for common OT surgical procedures.
	CO2	Evaluate the outcomes of various surgical techniques used in the operating theater.
	CO3	Analyze the roles and responsibilities of OT professionals during surgeries.
	CO4	Recall key surgical procedures and the specific tasks involved in each.
	CO5	Apply OT procedures and principles to support safe and effective surgeries.

GRAPHICAL REPRESENTATION





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School of Health & Allied Sciences

Program	**B.Sc. Anaesthesia and Operation Theatre Technology (Hons.)**		
Subject Name	**OT Surgical Procedures-Theory**	**Session**	**Even, 2024-2025**
Semester	**II**	**Year**	**August, 2025**
Time: 3 Hour Max. Marks : **70**	• 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 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 Mark from Q1-i to xii) – 12 Marks

Q. No. 1	QUESTIONS	Marks	COs	KL
i	What does PACU stand for?	01	CO4	K1
ii	Mention one indication for cholecystectomy.	01	CO4	K1
iii	What is the purpose of suctioning during surgery?	01	CO3	K2
iv	What is the full form of CABG?	01	CO4	K1
v	Name a condition where a craniotomy is performed.	01	CO4	K1
vi	What is the purpose of autoclaving?	01	CO5	K1
vii	What is hernia?	01	CO4	K1
viii	What is the basic principle of aseptic technique?	01	CO5	K2
ix	What are the two main types of prosthetic valves used in valve replacement?	01	CO4	K1
x	Mention one robotic surgical system.	01	CO4	K1

xi	What type of suture is ideal for buried cosmetic closure?	01	CO2	K3
xii	Name one technique for achieving hemostasis.	01	CO2	K1

Section B (Answer any FOUR out of SIX) – 28 Marks
(Each question Carry 07 Marks)

Q. No.	QUESTIONS	Marks	COs	KL
2	Differentiate between midline and transverse incisions with their advantages.	07	CO2	K4
3	Explain the procedure of autoclaving and monitoring sterilization.	07	CO5	K2
4	Describe the technique and benefits of interrupted suturing.	07	CO2	K3
5	Write a short note on endoscopic biopsy and its clinical importance.	07	CO1	K3
6	Describe the technique and advantages of laparoscopic hernia repair.	07	CO5	K3
7	Explain Transcatheter Aortic Valve Replacement (TAVR) and its benefits.	07	CO2	K2

Section C (Answer any TWO out of FOUR) – 30 Marks
(Each question Carry 15 Marks)

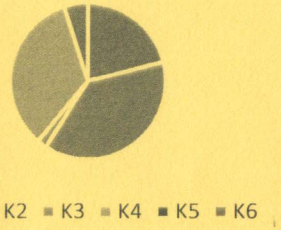
Q. No.	QUESTIONS	Marks	COs	KL
8	Compare and contrast interrupted, continuous, and subcuticular suturing techniques. Add clinical indications and advantages.	15	CO2	K4
9	Describe in detail the steps of the CABG procedure, including graft harvesting, creation of anastomoses and techniques.	15	CO1	K5
10	Explain in detail the surgical approach and postoperative care in craniotomy, with variations based on location.	15	CO1	K5
11	A 30-year-old patient undergoes an open appendectomy. During wound closure, the surgeon opts for interrupted sutures. However, the patient returns with mild redness and discharge at one corner of the incision. a) Why were interrupted sutures preferred in this case? b) What are the possible reasons for the discharge?	15	CO3 CO5	K6
	c) What infection control protocols should be followed now?			

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

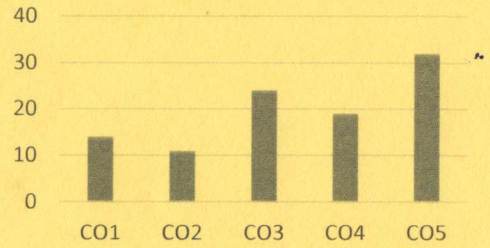
Course Outcomes	CO1	Design and Demonstrate the use of technology in the operating Theatre .
	CO2	Evaluate the role of advanced technology in enhancing surgical procedure.
	CO3	Analyze the impact of technology on patient safety and surgical outcome.
	CO4	Recall essential technologies used in the operating room.
	CO5	Apply technological knowledge to improve efficiency and safety in surgeries.

GRAPHICAL REPRESENTATION

Bloom's Level wise Marks Distribution



Course Outcome Wise Marks Distribution



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Program	**B.Sc. Anaesthesia and Operation Theatre Technology (Hons.)**		
Subject Name	**OT & Technology -Theory**	**Session**	**Even, 2024-2025**
Semester	**II**	**Year**	**August, 2025**
Time: 3 Hour Max. Marks : 70	• 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 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 Mark from Q1-i to xii) – 12 Marks

Q. N 1	QUESTIONS	Marks	COs	KL
i	Why is surgery scheduling important?	01	CO3	K6
ii	What complication can arise if bipolar diathermy is used improperly near nerves?	01	CO3	K5
iii	Which safety feature prevents over-suctioning in modern suction machines?	01	CO3	K2
iv	What precaution should staff take while operating the C-arm to reduce radiation exposure?	01	CO2	K4
v	What structural feature allows laparoscopes to transmit light efficiently?	01	CO2	K1
vi	How does the depth of field in a surgical microscope affect precision in microsurgery?	01	CO2	K2
vii	What is the function of ECG electrodes?	01	CO2	K3
viii	Mention one vital sign monitored using a pressure transducer.	01	CO2	K4
ix	Why is routine checking of anaesthesia machines important?	01	CO4	K3
x	What is the primary function of a pacemaker?	01	CO4	K4

xi	Mention one daily responsibility of an OT technologist.	01	CO1	K4
xii	What is one way to manage OT workflow efficiently?	01	CO1	K6

Section B (Answer any FOUR out of SIX) – 28 Marks
(Each question Carry 07 Marks)

Q. No.	QUESTIONS	Marks	Cos	KL
2	Describe the types, working principles, maintenance procedures, and safety precautions for the following: a) OT Tables b) OT Lights c) Central Supply Department	07	CO1	K3
3	What is a HEPA filter? Explain its structure, working mechanism, and importance in the Operation Theatre (OT).	07	CO4	K2
4	Why is record-keeping important in the OT environment? Explain the process of inventory management, stock control methods, and challenges faced in maintaining accurate records.	07	CO3	K2
5	Describe the indenting process in the hospital system. Explain the proper storage techniques to maintain the sterility, shelf-life, and usability of OT supplies and instruments.	07	CO4	K6
6	Discuss the psychological support required for patients undergoing surgery. How can OT staff handle their own stress and communicate effectively with patients and their families?	07	CO3	K5
7	Describe the functionality and types of pacemakers. What are the indications for use, and how is implantation and post-implantation monitoring carried out?	07	CO4	K4

Section C (Answer any TWO out of FOUR) – 30 Marks
(Each question Carry 15 Marks)

Q. No.	QUESTIONS	Marks	COs	KL
8	List and describe care, handling, and sterilization protocols of laparoscopes and bronchoscopes to prevent cross-contamination.	15	CO4	K1
9	Discuss the structural features and working principle of an operating microscope. How does it assist in microsurgeries?	15	CO3	K2
10	Explain the principle of surgical diathermy. Compare and contrast monopolar and bipolar types, including their indications and contraindications. List safety guidelines for the use of diathermy.	15	CO4	K5
11	Discuss the importance of anesthetic equipment in perioperative care. Explain the types of anesthetic machines, their components (vaporizers, flow meters, breathing circuits, monitoring devices, and safety features. Include diagrams to support your explanation.	15	CO4	K6

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Program	**B.Sc. A&OTT / MLT (Hons.)**		
Subject Name	**Environmental Sciences**	**Session**	**Even, 2024-2025**
Semester	**II**	**Year**	**August, 2025**
Time: 3 Hour Max. Marks : 70	• 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 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 Mark from Q1-i to xii) – 12 Marks

Q. N 1	QUESTIONS	Marks	COs	KL
i	What are the classifications of Environment?	01	CO1	K1
ii	What are human-made surroundings called?	01	CO2	K1
iii	When did the Chipko Movement begin?	01	CO2	K1
iv	Name the Indian desert ecosystem.	01	CO4	K1
v	Name one endangered animal in India.	01	CO2	K1
vi	On which river is the Sardar Sarovar Dam built?	01	CO2	K1
vii	Which board publishes AQI data?	01	CO3	K1
viii	What is a linear sequence of organisms eating each other?	01	CO2	K2
ix	What are areas rich in biodiversity under threat called?	01	CO4	K2
x	Which forest animal would you expect to find in Periyar wildlife sanctuary?	01	CO5	K3

xi	Identify a state in India where coral reefs are found?	01	CO2	K3
xii	Which species thrives in the Deccan Plateau ecosystem?	01	CO4	K4

Section B (Answer any FOUR out of SIX) – 28 Marks
(Each question Carry 07 Marks)

Q. No.	QUESTIONS	Marks	COs	KL
2	Give the purpose of mining. What are the possible environmental consequences of mining?	07	CO2	K4
3	Write down a case study to understand practical application of resettlement and rehabilitation.	07	CO1	K3
4	Differentiate between renewable and non-renewable resources.	07	CO4	K2
5	Write the difference between marine pollution and water pollution.	07	CO3	K2
6	Explain the grassland ecosystem and its characteristics. Write down types of grasslands in India.	07	CO2	K2
7	Explain different types of ecosystem along with their examples	07	CO5	K2

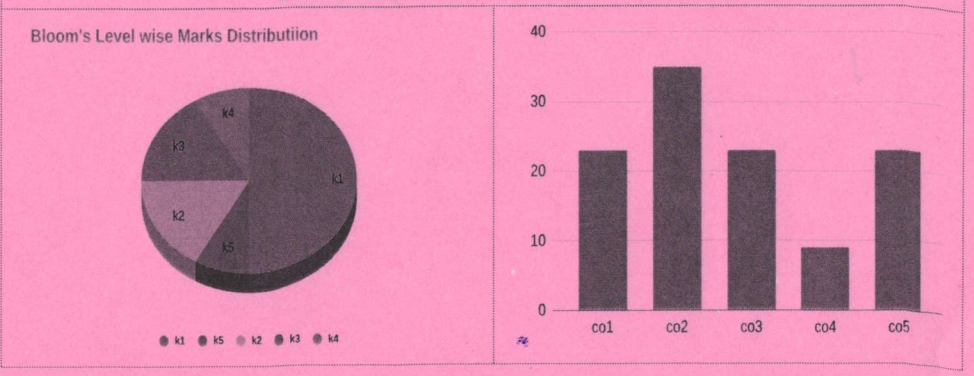
Section C (Answer any TWO out of FOUR) – 30 Marks
(Each question Carry 15 Marks)

Q. No.	QUESTIONS	Marks	COs	KL
8	What are global biodiversity hotspots? Name four global hotspots present in India along with its significance, threats and conservation efforts.	15	CO1	K4
9	Explain causes, effects and implications of Ganga river pollution and Bhopal Gas Tragedy.	15	CO2	K4
10	What are environmental laws and elaborate on the Environmental Protection Act and Water Protection Act?	15	CO3	K2
11	Explain the EIA process along with its stages.	15	CO5	K2

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

Course Outcomes	CO1	Design sustainable solutions for environmental issues related to healthcare.
	CO2	Evaluate the environmental impact of healthcare practices and propose alternative
	CO3	Analyze the relationship between human health and environmental factors.
	CO4	Recall basic environmental science concept ,such as ecosystem and pollution
	CO5	Apply environmental science principles to promote sustainability in healthcare settings.

GRAPHICAL REPRESENTATION



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Program	**B.Sc. MLT / A&OTT (Hons.)**		
Subject Name	**Healthcare Informatics and Data Analytics**	**Session**	**Even, 2024-2025**
Semester	**II**	**Year**	**August, 2025**
Time: 3 Hour Max. Marks : 70	• 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 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 Mark from Q1-i to xii) – 12 Marks

Q. N 1	QUESTIONS	Marks	COs	KL
i	Give an example from everyday life where informatics plays an important role?	01	CO4	K1
ii	Name one component of the informatics system?	01	CO4	K1
iii	Full form of EHR?	01	CO1	K1
iv	Name one telemedicine app?	01	CO4	K1
v	What wearable device monitors?	01	CO4	K2
vi	Name tool used for Data analysis?	01	CO5	K1
vii	Which graph is used to show frequency of any data?	01	CO2	K2
viii	Which graph is used to show trends in any dataset?	01	CO2	K2
ix	Name one Google cloud platform?	01	CO4	K1
x	Define Metropolitan Area Network?	01	CO4	K2

xi	Write down the formula of Mean?	01	CO3	K1
xii	Name one key feature of SNOMED CT?	01	CO4	K2

Section B (Answer any FOUR out of SIX) – 28 Marks
(Each question Carry 07 Marks)

Q. No.	QUESTIONS	Marks	COs	KL
2	Differentiate between Predictive Analytics and Prescriptive Analytics?	07	CO4	K3
3	Explain Telemedivine and its benefits and challenges?	07	CO4	K3
4	Write down the future prospect of AI in healthcare?	07	CO1	K2
5	Explain Heat map along with its applications and example?	07	CO5	K3
6	Explain Types of network and its examples?	07	CO3	K2
7	Differentiate between Bar graph and Histogram?	07	CO4	K4

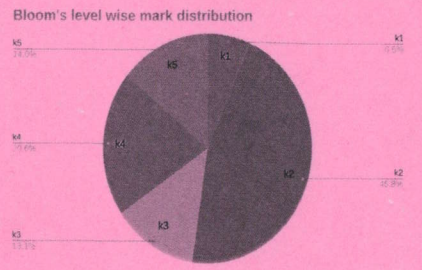
Section C (Answer any TWO out of FOUR) – 30 Marks
(Each question Carry 15 Marks)

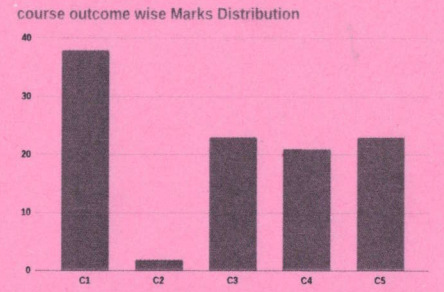
Q. No.	QUESTIONS	Marks	COs	KL
8	What is data analysis? Explain different data analytic Techniques with an example?	15	CO5	K2
9	Explain data accuracy? Give strategies and challenges in ensuring data accuracy?	15	CO1	K5
10	What do you understand about software applications? Explain its functions and applications.	15	CO3	K2
11	What is healthcare data? Explain different types of healthcare data.	15	CO1	K4

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

Course Outcomes	CO1	Develop a plan for utilizing healthcare data to improve patient outcomes.
	CO2	Evaluate healthcare data to access system performance and identify areas for improvement.
	CO3	Analyze data patterns to support decision-making in healthcare settings.
	CO4	Recall basic concepts of healthcare informatics and data analytics tools.
	CO5	Apply data analysis techniques to optimize the healthcare process.

GRAPHICAL REPRESENTATION





xi	What is the method of sterilization using dry heat?	01	CO5	KL3
xii	Which bacteria appear pink after Gram staining?	01	CO2	KL1

Section B (Answer any FOUR out of SIX) – 28 Marks
(Each question Carry 07 Marks)

Q. No.	QUESTIONS	Marks	COs	KL
2	What are the structural components of flagella, and how do they facilitate microbial motility?	07	CO1	KL2
3	How does the Baltimore classification system organize viruses based on their genetic material and replication methods?	07	CO3	KL4
4	a) What is algae? Describe its major types based on pigmentation and structure. (3 Marks) b) Differentiate between oogamy and polygamy, providing definitions, examples, and biological significance(4Marks)	07	CO2	KL2
5	**A**. Discuss the major applications of microbiology in healthcare, including its role in disease diagnosis, treatment, and prevention. (4Marks) **B.** Define fungi, and explain any two key characteristics along with two common examples. (3 Marks)	07	CO3	KL3
6	Describe the steps of microbial pathogenesis and explain host–pathogen interactions	07	CO4	KL5
7	Compare generalised and specialised transduction in bacteria.	07	CO5	KL4

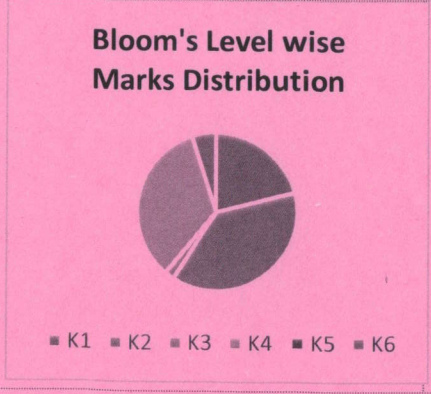
Section C (Answer any TWO out of FOUR) – 30 Marks
(Each question Carry 15 Marks)

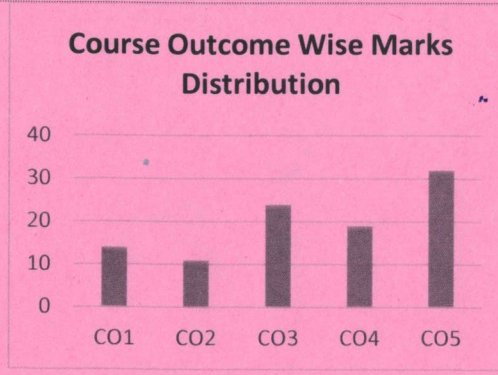
Q. No.	QUESTIONS	Marks	COs	KL
8	Provide a brief overview of viruses, including their types, structure, modes of reproduction, and general characteristics.	15	CO1	KL2
9	Write a short note on bacteria, highlighting their structure, types, and significance in human health and the environment.	15	CO3	KL4
10	**A**. Describe the structure of DNA with the help of a well-labelled diagram. (7 Marks) **B**. Explain the process of DNA replication, highlighting the role of key enzymes and the concept of semi-conservative replication. (8 Marks)	15	CO4	KL3
11	Discuss the various factors that influence the lag phase and log (exponential) phase during bacterial growth.	15	CO5	KL5

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

Course Outcomes	CO1	Create a microbiological chart to classify pathogens and their effects.
	CO2	Evaluate microbial infections and their treatments based on laboratory findings.
	CO3	Analyse the growth and behaviour of microorganisms in various environments.
	CO4	Recall basic concepts of microbiology, including bacterial structures and functions.
	CO5	Apply microbiological knowledge to diagnose infections and diseases.

GRAPHICAL REPRESENTATION





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School of Health & Allied Sciences

Program	**B.Sc. MLT / A&OTT (Hons.)**		
Subject Name	**General Microbiology**	**Session**	**Even, 2024-2025**
Semester	**II**	**Year**	**August, 2025**
Time: 3 Hour Max. Marks : 70	• 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 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 Mark from Q1-i to xii) – 12 Marks

Q. N 1	QUESTIONS	Marks	COs	KL
i	What is the site of protein synthesis in cells?	01	CO4	KL2
ii	What type of virus uses reverse transcription?	01	CO1	KL1
iii	Which microbial group includes Amoeba?	01	CO1	KL1
iv	What enzyme joins Okazaki fragments?	01	CO4	KL3
v	What do you call bacteria that require oxygen?	01	CO2	KL1
vi	What is the process of bacteria forming spores for survival?	01	CO1	KL2
vii	What term describes microorganisms that cause disease?	01	CO1	KL3
viii	What is the extra-chromosomal DNA in bacteria?	01	CO3	KL5
ix	Which microbiological tool is used to grow microbes in the lab?	01	CO3	KL4
x	What is the primary stain used in Gram staining?	01	CO5	KL2

xi	What is the method of sterilization using dry heat?	01	CO5	KL3
xii	Which bacteria appear pink after Gram staining?	01	CO2	KL1

Section B (Answer any FOUR out of SIX) – 28 Marks
(Each question Carry 07 Marks)

Q. No.	QUESTIONS	Marks	COs	KL
2	What are the structural components of flagella, and how do they facilitate microbial motility?	07	CO1	KL2
3	How does the Baltimore classification system organize viruses based on their genetic material and replication methods?	07	CO3	KL4
4	a) What is algae? Describe its major types based on pigmentation and structure. (3 Marks) b) Differentiate between oogamy and polygamy, providing definitions, examples, and biological significance(4Marks)	07	CO2	KL2
5	**A**. Discuss the major applications of microbiology in healthcare, including its role in disease diagnosis, treatment, and prevention. (4Marks) **B.** Define fungi, and explain any two key characteristics along with two common examples. (3 Marks)	07	CO3	KL3
6	Describe the steps of microbial pathogenesis and explain host–pathogen interactions	07	CO4	KL5
7	Compare generalised and specialised transduction in bacteria.	07	CO5	KL4

Section C (Answer any TWO out of FOUR) – 30 Marks
(Each question Carry 15 Marks)

Q. No.	QUESTIONS	Marks	COs	KL
8	Provide a brief overview of viruses, including their types, structure, modes of reproduction, and general characteristics.	15	CO1	KL2
9	Write a short note on bacteria, highlighting their structure, types, and significance in human health and the environment.	15	CO3	KL4
10	**A**. Describe the structure of DNA with the help of a well-labelled diagram. (7 Marks) **B**. Explain the process of DNA replication, highlighting the role of key enzymes and the concept of semi-conservative replication. (8 Marks)	15	CO4	KL3
11	Discuss the various factors that influence the lag phase and log (exponential) phase during bacterial growth.	15	CO5	KL5

JGI ARKA JAIN University Jharkhand | NAAC GRADE A ACCREDITED UNIVERSITY			END SEM EXAMINATION School of Health & Allied Sciences
Program	**B.Sc. MLT / A&OTT (Hons.)**		
Subject Name	**Critical Thinking**	**Session**	**Even, 2024-2025**
Semester	**II**	**Year**	**August, 2025**
Time: 1.5 Hour Max. Marks : **35**	• Start writing from 2nd page onwards; **don't Write on the 1st Page Backside** • **Answer all Questions of Section A (Compulsory)** • **Answer Any Five 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 **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 Mark from Q1-i to v) – 05 Marks

Q. N 1	QUESTIONS	Marks	COs	KL
i	Define critical thinking?	01	CO4	K1
ii	List the one system commonly used in critical thinking.	01	CO4	K1
iii	Define Argument?	01	CO1	K1
iv	Give full form of RCA?	01	CO4	K1
v	Name tools used for strategic planning?	01	CO4	K2

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

Q. No.	QUESTIONS	Marks	COs	KL
2	List different ways how critical thinking improves patient outcomes?	02	CO5	K1
3	Categorize different types of logical reasoning used in healthcare and explain how they improve patient care?	02	CO5	K4

4	Describe the key characteristics of arguments?	02	CO1	K2
5	Construct 2 examples of strong arguments from a healthcare perspective?	02	CO3	K3
6	Explain the concept of a strawman and support it with an example?	02	CO2	K2
7	Describe the false dilemma fallacy and support it with an example?	02	CO4	K2

Section C (Answer any TWO out of FOUR) – 20 Marks
(Each question Carry 10 Marks)

Q. No.	QUESTIONS	Marks	COs	KL
8	Describe critical thinking and explain the characteristics of a critical thinker?	10	CO1	K2
9	Identify what is a conclusion, and analyze the characteristics of a strong conclusion with an example?	10	CO2	K4
10	Explain how Fishbone Analysis and Pareto Analysis can be applied in healthcare to investigate disease causes?	10	CO3	K4
11	Explain the concept of process mapping and outline steps to streamline patient admissions processes in a hospital?	10	CO5	K3

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

Course Outcomes	CO1	create reasoned arguments to address complex healthcare or scientific problems.
	CO2	Evaluate the strength and weaknesses of different viewpoints or solution
	CO3	Analyze situations from multiple perspectives to reach a well- informed conclusion.
	CO4	Recall principles of logical reasoning and cognitive biases.
	CO5	Apply critical Thinking skills to make informed decisions in clinical or academic settings.

GRAPHICAL REPRESENTATION