

MITM / First Semester / MIT501: Advanced Programming Concepts
--

Candidates are required to answer all the questions in their own words as far as practicable. Figures in brackets indicate full marks.

GROUP “A”

Case / Situation Analysis Questions

Attempt all questions

1. Carefully read the following case and critically analyze it, and answer the questions that follow: [30]

A college library decided to develop a web-based Library Management System to replace its traditional manual record-keeping process. The system was developed using the programming language Python and the Django framework. Students can log into the application to search for books, issue or return books, and check due dates online. Librarians can manage book records, student information, and generate reports efficiently. The system uses a MySQL database to store information related to books, users, and transactions.

Python was selected because of its simple syntax, fast development process, and strong support for web technologies. Django provides built-in security features such as authentication and protection against common cyber-attacks, making the application secure and reliable. By using this web application, the library can reduce paperwork, improve accuracy, and provide faster services to students and staff.

Questions:

- a. Why was Python chosen for developing the library management system?
- b. What are the benefits of using a web-based library management system over a manual system?
- c. Explain the role of Django in web application development.

GROUP “B”

Problem Solving / Critical Analysis Questions

Attempt any THREE Questions

[10 × 3 = 30]

2. List built-in data types in Python. Explain list and tuple data types with example. Compare list with set.
3. Create a class Circle containing an instance variable radius. The class also contains two instance methods area() and circumference() to find area and circumference of circles respectively. Use this class to find area and circumference of two different circles. Use PI as a class variable.
4. Explain array indexing and slicing in NumPy with appropriate programs. What do you mean by array broadcasting?
5. Explain how merging and joining DataFrames are performed in Pandas. Discuss different techniques for handling missing data in Pandas.

GROUP “C”

Concept Based Short Questions

Attempt any EIGHT Questions

[8 × 5 = 40]

6. Describe the steps to create and activate a virtual environment in Python. What are the advantages of using virtual environments?
7. Explain dictionary data type with example.
8. Explain reading and writing files in Python with example.
9. How do you add instance methods in a Python class? What is method overriding?
10. What are layout managers? Explain any two types of layouts.
11. What is SQL injection? How do parameterized queries help prevent it?
12. What are the advantages of TCP over UDP? Explain the role of the Python socket module in network programming.
13. Explain database integration in web applications.
14. Describe the process of user login and logout using authentication systems.

MITM / First Semester / MIT502: Object Oriented Analysis and Design

Candidates are required to answer all the questions in their own words as far as practicable. Figures in brackets indicate full marks.

GROUP “A”

Case / Situation Analysis Questions

Attempt all questions

1. Carefully read the following case and critically analyze it, and answer the questions that follow:

[30]

A university library wants to automate its operations. The system should allow students and staff to search for books, borrow and return books, and view due dates. Librarians manage the catalog, add new books, remove old copies, and track issued books. The system must ensure that a book copy cannot be issued to more than one user at a time and must calculate fines for late returns.

The library may contain multiple copies of the same book, and each copy has a unique identification number. Users must log in before accessing services. The system should also maintain a history of borrowed books.

Questions:

- a. Explain the functional requirements and non-functional requirements of the above system. Also, identify all the actors involved in the system.
- b. Draw a class diagram with relationships (association, aggregation, composition) and also Specify attributes and methods for any three important classes.
- c. Draw the use case diagram for the system and also list out at least five major use cases with brief descriptions.

GROUP “B”

Problem Solving / Critical Analysis Questions

Attempt any THREE Questions

[10 × 3 = 30]

2. Explain the object-oriented approach to system development. How does it differ from structured analysis and design?
3. Draw and explain class diagrams, including relationships like association, aggregation, and composition.
4. Draw and explain a use case diagram for student registration system.
5. Design and explain a UML model for an Online Shopping System.

GROUP “C”

Concept Based Short Questions

Attempt any EIGHT Questions **[8 × 5 = 40]**

6. Explain the process of object-oriented analysis (OOA) in detail.
7. Explain sequence diagram with example.

8. What do you mean by Joint Application Development?
9. Explain the Business Process Identification with Use Cases
10. Explain Creating Structural Models Using CRC Cards.
11. Difference between server-based architectures, client-based architectures,
12. Explain the Change Management with example.
13. Explain the role of sequence diagram with a simple example.
14. Differentiate between aggregation and composition.

TRIBHUVAN UNIVERSITY
FACULTY OF MANAGEMENT
Office of the Dean
2026
Model Question

Full Marks: 100 Pass Marks: 50 Credit Hour: 3 Time: 4 Hrs.

MITM / First Semester / MIT503: Information Technology Audit

*Candidates are required to answer all the questions in their own words as far as practicable.
Figures in brackets indicate full marks.*

GROUP “A”

Case / Situation Analysis Questions

Attempt all questions

1. Carefully read the following case and critically analyze it, and answer the questions that follow:

[30]

Suppose that you are working as an IT auditor for a fintech organization having significant IT infrastructures. The IT assets includes hardware peripherals, data center, ERP system, cloud computing, and mobile devices. The other technology systems impacting the organizational operations includes IoT based NFC payments. Being auditor, you have to understand IT audit environment, perform IT audit using appropriate audit tools and techniques. You should be able to identify IT risks and suggest risk mitigation measures. In context to this scenario, answer following questions.

Questions:

- a. Identify the possible IT environment in the organization? How will you adapt internal and external audit functions in the environment?
- b. Explain the IT audit process you will follow.
- c. How can you perform risk assessment? Describe the possible risk response techniques you will adapt.

GROUP “B”

Problem Solving / Critical Analysis Questions

Attempt any THREE Questions

[10 × 3 = 30]

2. Suppose you are using Computer Assisted Audit Techniques (CAATs) for IT audit. How can you use CAATs application reviews, auditing application controls and operational reviews?
3. Explain the audit involvement in information systems operations. Sketch a sample business continuity and disaster recovery plan for information system operations audit.
4. Discuss the types of cybersecurity audits. Explain the tools and techniques you can use for network and cybersecurity audits.
5. How IT governance ensures alignment of IT with business objectives? Describe the end user development application risks.

GROUP “C”

Concept Based Short Questions

Attempt any EIGHT Questions [8 × 5 = 40]

6. Explain the role of IT auditor.

7. What is audit plan? Consider you have comprehensive understanding of audit universe, now prepare and IT audit plan.
8. Explain the audit functions that may be automated through audit productivity tools.
9. How can application control be broken down into input, processing, and output controls.
10. Discuss the steps in building an IT balanced scorecard.
11. What is the ERM Integrated Framework? Explain Enterprise Risk Management (ERM) according to COSO.
12. How is protection of data files and programs done?
13. What is cybersecurity audit? Differentiate Internal and External Cybersecurity Audit.
14. Describe the COBIT framework.

TRIBHUVAN UNIVERSITY
FACULTY OF MANAGEMENT

Model Question -2026

(First Semester)

ENG 501: Professional and Technical Communication

Candidates are required to answer all the questions in their own words as far as practicable. Figures in the bracket indicate full marks

Attempt all questions

Group “A”

Case Analysis Question

1. Carefully read the following case and answer the questions that follow: [3x10= 30]

Professionals know that they are contributors to a larger cause, that it's not all about them. Just as in athletics and other team efforts, being a team player in business is something of a balancing act. On the one hand, you need to pay enough attention to your own efforts and skills to make sure you're pulling your own weight. On the other hand, you need to pay attention to the overall team effort to make sure the team succeeds. Remember that if the team fails, you fail, too.

Great team players know how to make those around them more effective, whether it's by lending a hand during crunch time, sharing resources, removing obstacles, making introductions, or offering expertise. In fact, the ability to help others improve their performance is one of the key attributes executives look for when they want to promote people into management.

Being a team player also means showing loyalty to your organization and protecting your employer's reputation—one of the most important assets any company has. Pros don't trash their employers in front of customers or in their personal blogs. When they have a problem, they solve it; they don't share it.

Questions:

- a. If you prefer to work by yourself, should you take a job in a company that uses a team-based organization structure? Why or why not?
- b. You can see plenty of examples of unprofessional business behavior in the news media and in your own consumer and employee experiences. Why should you bother being professional yourself?
- c. Assume that you are the team leader of a HR department in any service orientated business such as hospitality, health care, transportation, or finance. Enlist some of the problems that might arise while working in team and offer solution to them.

Group “B”

Problem Solving/ Critical Analysis Questions

Attempt any **THREE** questions:

[3x10=30]

2. Pretend that you are the president of student club of Department of Management, Shankardev Campus, TU. There has been a great pressure from your third semester colleagues that you must organize welcome-farewell-2024 program within a week. The office of the Dean, Faculty of Management already published the notice for board examination of MITM first semester which has complicated the matter; and the first semester students are stressed since the course has not been completed yet. Meanwhile, if you decide to conduct the program you might have to bear with fierce criticism from the first semester students. Now call for a meeting with all the Class Representatives (CRs) from first and third semesters to discuss the issue and reach a wise conclusion. You might have some other issues to discuss such a journal publication, annual picnic, annual sports events, and industry-academia discussion series. Write a memo to all the class representatives about the agenda for the meeting.

3. Prepare brief meeting minutes for a software development meeting. Include meeting title, date, participants, agenda, discussion points, decisions, action items, responsible persons, and deadline.
4. Write a user manual for any appliance you use at home (e.g., microwave, washing machine, kettle, fan, coffee maker). Make it clear, simple, and easy to follow. Include at least 7 steps covering setup, operation, safety, and maintenance.
5. Discuss the importance of effective team collaboration in professional and academic settings. In your answer, explain the role of team collaboration processes and tools, the significance of leadership communication, and the strategies used for conflict resolution and constructive feedback in maintaining a productive and harmonious working environment.

Group “C”

Concept Based Short Answer Questions

Attempt any **EIGHT** questions:

[8x5=40]

6. What is *ethics* in business communication? List any six guidelines for making ethical communication choices.
7. List four general guidelines for using communication technology effectively.
8. Why is data storytelling important in IT and business environments?
9. What is professional and technical communication, and why is it important in IT management?
10. What is intercultural and virtual communication, and why is it important in modern workplaces?
11. List and briefly explain any four team collaboration tools used in IT workplaces.
12. How can feedback and conflict resolution improve workplace communication and productivity?
13. Differentiate between a user manual and an SOP.
14. What is a press release? Write its major components.

TRIBHUVAN UNIVERSITY
FACULTY OF MANAGEMENT
Office of the Dean
Model Questions

Full Marks: 100
Pass Marks: 50
Credit Value: 2
Time: 3 Hours

MITM/First Semester/MGT 501: Foundations of Business Management
--

Candidates are required to answer all the questions in their own words as far as practicable. Figures in brackets indicate full marks.

Group "A"

Case / Situational Analysis Questions

Attempt All Questions

1. Carefully read the following case and critically analyze it, and answer the questions that follow: [30]

H. Retail Services Group (HRSG), a mid-sized company, with operations in retail, logistics, and IT-enabled business services, was established in Nepal in 2010 and has experienced rapid market pressure after the growth of digital commerce platforms in South Asia. HRSG traditionally relied on face-to-face customer interaction, manual inventory systems, and hierarchical management practices; however, after the COVID-19 pandemic and increasing competition from global e-commerce companies, the organization decided to transform its business model into an integrated digital platform serving customers across Nepal and neighboring markets.

The retail division has introduced online ordering systems, mobile payment gateways, cloud-based inventory management, and AI-supported customer analytics; however, managers have faced difficulties in planning and coordinating digital operations from the outset of the change process. Senior managers struggle to adapt to data-driven decision-making while employees in branch offices fear job displacement due to automation. The management felt that the implementation process slowed due to limited digital skills among staff, resistance to organizational restructuring, cybersecurity concerns, and unreliable technological infrastructure. The situation left the company uncertain about how to balance investment costs with long-term profitability.

On the other hand, HRSG's multinational IT-service division, operating with teams in Nepal, India, Singapore, and Dubai, has shifted toward hybrid work arrangements. Team leaders are now expected to function as "e-leaders" who can manage virtual teams through digital communication platforms such as Microsoft Teams, Slack, Zoom, and project management dashboards. Employee motivation and collaboration have declined; however, remote working has increased flexibility. Communication gaps between remote and office-based employees have created misunderstandings, low trust, and reduced innovation. Employees' expectations differed: younger employees demand flexible leadership, continuous feedback, and digital collaboration tools, while older managers prefer traditional supervision methods.

HRS&G recently initiated an AI-driven performance management system integrated with real-time digital dashboards to monitor employee productivity, customer response time, sales trends, and operational efficiency. Employees have raised concerns regarding data privacy, excessive monitoring, algorithmic bias, and stress caused by continuous performance tracking; however, the top management believes these systems will improve managerial control and sustainability. Some managers also worry that overdependence on AI-based evaluations may reduce human judgment, creativity, and employee morale.

Questions

- a. What are the key challenges in digital transformation? What could be the best-fit techniques that integrate IT tools for effective decision-making and workforce management?
- b. Do you think the digital leadership and communication technologies can enhance motivation, innovation, and teamwork across geographically distributed teams? Justify.
- c. How do technological tools contribute to managerial control, performance evaluation, and organizational sustainability, citing possible risks and mitigation techniques?

Group "B"

Problem Solving / Critical Analysis Questions

Answer any THREE questions:

[3 × 10 = 30]

2. Environment analysis and estimating profit horizon are the key success factors for a digital enterprise. Justify the statement illustrating examples from emerging technologies.
3. Discuss the relevance of data analytics and machine learning in managerial decision-making. Evaluate how these tools improve the accuracy and speed of organizational planning.
4. Do you think the traditional structures are fit for the digital or hybrid workplaces? How does technology reshape principles of organizing and staffing?
5. Evaluate the role of sustainability, CSR, and green technologies in modern managerial practices. How can IT-enabled systems support environmental responsibility?

Group "C"

Concept Based Short Answer Questions

Answer any EIGHT questions:

[8 × 5 = 40]

6. Describe any two IT-enabled business models.
7. Highlight the major cyber laws that are in common practice.
8. Briefly explain the concept of agile and adaptive planning in digital organizations.

9. What are the common digital competencies of leaders?
10. Describe the significance of MIS in managerial control.
11. Explain the pros and cons of remote working.
12. Highlight the major IT-related challenges for the managers.
13. Explain the emergence of digital governance.
14. Suggest prominent strategies to foster an innovation culture in business organizations using digital technologies.
