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SEAT No. :

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PE5894

[6553]-101

F.Y. M.B.A. (IT)

**FIT 501 MJ-GC-01 : FUNDAMENTALS OF INFORMATION
TECHNOLOGY**

(2024 Credit Pattern) (Semester - I)

Time : 2½ Hours]

[Max. Marks : 50

Instructions to the candidates :

- 1) *All questions are compulsory.*
- 2) *Each questions carries 10 marks.*
- 3) *Figures to the right indicate full marks.*

Q1) Give the answers in short (Solve any 5) :

[5×2=10]

- a) List the Network topologies.
- b) Define Intranet.
- c) Explain PROM.
- d) What is Virtual Memory?
- e) _____ bits = 2 Bytes.
- f) What is SD card?
- g) List the types of microprocessor.
- h) List the types of Computers.

Q2) Explain in brief (Solve any 2) :

[2×5=10]

- a) Define software. Explain types of software.
- b) Explain various primary storage devices.
- c) Explain BCD coding system.

Q3) Convert the following :

[2×5=10]

- a) i) $(20)_{10} = (?)_2$
ii) $(62)_8 = (?)_{16}$

OR

- b) i) $(1111)_2 = (?)_8$
ii) $(A1)_{16} = (?)_8$

P.T.O.

Q4) Solve and do analysis (Solve any 1) :

[1×10=10]

- a) Define OS. Explain the functions of Operating System. List the types of OS.

OR

- b) Draw the block diagram of basic organization of a computer system. Explain the functions units of all units.

Q5) Application oriented questions (Solve any 1) :

[1×10=10]

- a) If you are an IT expert, a small web development firm wants to purchase PC (H/W) and Software for his/her shop. What H/W and S/W would you suggest for his/her firm?

OR

- b) Explain the importance of software and hardware security? How you will manage security if you are working as EDP manager in banking sector?



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SEAT No. :

PE5895

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[6553]-102

F.Y. M.B.A. (Information Technology)

OOS502MJ-GC-02 : OBJECT ORIENTED SOFTWARE ENGINEERING

(2024 Credit Pattern) (Semester-I)

Time : 2½ Hours]

[Max. Marks : 50

Instructions to the candidates:

- 1) All questions are compulsory.*
- 2) Draw neat labelled diagrams whenever necessary.*

Q1) Solve any five (2 marks each).

[10]

- a) Name two common SDLC models.
- b) Define non-functional requirements in software development.
- c) What is use-case diagram?
- d) Define the term 'Agile methodology'.
- e) Define regression testing.
- f) List qualities of good software.
- g) What is SRS?
- h) Define white box testing.

Q2) Solve any two (5 marks each).

[10]

- a) Compare and contrast different SDLC models such as waterfall and spiral.
- b) Explain Abstraction and Encapsulation in OOAD with examples.
- c) Write & explain any five golden rule for user interface design.

P.T.O.

Q3) Solve any one. [10]

- a) Create input screen design for online voting system.
- b) Create SRS for library management system.

Q4) Solve any one. [10]

- a) Draw a use case diagram for an Airline Reservation system.
- b) Define Agile development. How does it differ from traditional software development methodology?

Q5) Solve any one. [10]

- a) Describe the concept of debugging. What are the key techniques used for debugging software.

OR

- b) Draw a sequence diagram for hotel room booking process in a hotel reservation system. (Include interaction between Guest, Booking system. Room availability service & payment gateway) also draw an activity diagram for check-out process in a hotel reservation system. (Include steps like prepare Bill, Review charges with guest, process payment & complete check-out).



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[6553]-103

F.Y.M.B.A. (Information Technology)

**PPM 503 MJ-GC- 03 (UL) : PRINCIPAL PRACTICE MANAGEMENT
(2024 Credit Pattern) (Semester - I)**

Time : 2½Hours]

[Max. Marks : 50

Instructions to the candidates:

- 1) All questions are compulsory.*
- 2) Draw neat diagrams whenever necessary.*
- 3) Every question carries 10 marks.*

Q1) Answer any Five out of Eight. (2 marks each)

[10]

- a) Define SAP
- b) Define MIS
- c) Define Globalization
- d) Define Corporate Governance
- e) Define Management Triangle
- f) Define Behavioral Science
- g) Define Contingency
- h) Define Human Resource

Q2) Answer any Two out of Three. (5 marks each)

[10]

- a) Explain Functions of management in brief.
- b) Explain Manpower planning with example.
- c) Explain the MBO in brief.

P.T.O.

Q3) a) “Management is strong base of organizational success”. Explain it.[10]

OR

b) “Decisions are situational”. Explain with example. [10]

Q4) a) Explain Taylor theory of management with their appropriate points.[10]

OR

b) Differ the centralization & decentralization in brief. [10]

Q5) a) Explain decision making with example. [10]

OR

b) Explain the Organizational Design with appropriate example. [10]



Total No. of Questions : 5]

SEAT No. :

PE5897

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[6553]-104

F.Y. M.B.A. (IT)

**PRC-504-MJ-104-GC-04 : PROGRAMING IN C
(2024 Credit Pattern) (Semester - I)**

Time : 2½ Hours]

[Max. Marks : 50

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Each question having 10 marks.*
- 3) *Figures to the right indicate marks for individual questions.*

Q1) Give the answers in short (Solve any 5)

[5×2=10]

- a) Give output with explanation

```
Void main ( )  
{ int i = 0;  
  while (i < 10)  
  {  
    if (i == 4)  
      break;  
    printf ("%d\n", i);  
    i++;  
  }  
}
```

- b) Give output with explanation

```
#include <stdio.h>  
int sum(int k);  
int main ()  
{ int result = sum (10);  
  printf ("%d", result);  
  return 0;  
}  
int sum (int k)  
{  
  if (k > 0) {return k + sum (k -1); }  
  else return 0;  
}
```

P.T.O.

- c) Bitwise Operators in C.
- d) Explain strcpy () function with parameters.
- e) List any 10 keywords in C programming.
- f) Explain static variable in C programming.
- g) Explain types of errors in Programming?
- h) Define structure with example.

Q2) Solve the following any one. [2×5=10]

- a) Explain the roll of break and continue keywords in C programming?
- b) Explain with help of C program to declare two dimension array 4×3, accept element for the same.
- c) Write a C program display following output

```

5 5 5 5 5
4 4 4 4
3 3 3
2 2
1

```

Q3) Solve the following any one. [1×10=10]

- a) Write a program in C to find the square of any number using the function.
OR
- b) Write a C program calculate factorial of any given number by using recursive function.

Q4) Write the C program. [1×10=10]

- a) Write a program in C to find the LCM (Least Common Multiple) of any two numbers.
OR
- b) Write a Program to accept string from the console and count the UPPERCASE, lowercase, digits and Special characters as well to find the length of given string.

Q5) Project on. [1×10=10]

- a) Write a C Program to swap to values through function valueswap (a, b) call by reference redisplay the values of a and b.
OR
- b) Write a C program to accept string from the console and count number of Characters, Words, Special characters and spaces in the entered string.

* * *

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[6553]-105

F.Y.M.B.A. (IT)

**ADB 505 MJ-GC-05 : ADVANCED DATA BASE MANAGEMENT
SYSTEM**

(2024 Credit Pattern) (Semester - I)

Time : 2½ Hours]

[Max. Marks : 50

Instructions to the candidates:

- 1) All questions are compulsory.*
- 2) All questions carry equal marks.*

Q1) Answer the following Questions (any FIVE)

[5×2=10]

- a) Explain three characteristics of DBMS.
- b) Explain Cardinality.
- c) Explain durability Property.
- d) What is Fragmentation?
- e) What is meaning of Data privacy?
- f) Explain Column oriented NoSQL.
- g) Define Logical Data Independence.
- h) Define Commit Protocols.

Q2) Answer any Two.

[2×5=10]

- a) Explain Architecture of DBMS.
- b) Explain Data Manipulation rules.
- c) Define Deadlock? Explain Deadlock Handling Method.

Q3) a) Discuss the various types of storage used (volatile and non-volatile) and how these storage structures influence data recovery and system performance. **[10]**

OR

- b) Compare and contrast deferred and immediate database modification techniques in log-based recovery. **[10]**

P.T.O.

Q4) a) Define encryption? What is the significance of Public Key Infrastructure (PKI) in ensuring secure data transmission. **[10]**

OR

b) Differentiate Between parallel database system & Distributed Database System. **[10]**

Q5) a) Normalize Upto 3NF **[10]**

Service Call Report Electrical Appliances					
Customer Code		Customer Name:			
Customer Address:					
Date of call:		Time of Call:			
Sr.No	Appliance Name	Problem	Spares used	Qty	Amount
				Total	
Service Charge			Grand Total:		
Engineer Code & Name:					
Customer Sign					

OR

b) Discuss the different development tools available for building and managing NoSQL databases. **[10]**

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Total No. of Questions : 5]

SEAT No. :

PE5899

[Total No. of Pages : 2

[6553]-106

F.Y.M.B.A. (Information Technology)

BBA 506-MJ-GC- 06 : BASICS BUSINESS ANALYTICS

(2024 Credit Pattern) (Semester - I)

Time : 2½Hours]

[Max. Marks : 50

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *All questions has internal options.*
- 3) *Each question carries 10 marks.*

Q1) Write answers in short (any 5 out of 8 questions)

[5×2=10]

- a) Define business analytics.
- b) Write skills required for good business analyst.
- c) Write any two differences between business intelligence and data science.
- d) What are the 5Vs of Big Data?
- e) Define the concept of descriptive analytics.
- f) Define data visualization with an example.
- g) Mention two ethical considerations in data collection.
- h) What is workforce planning?

Q2) Answer any 2 out of 3 questions.

[2×5=10]

- a) How does exploratory data analysis (EDA) aid decision-making?
- b) Explain customer segmentation and its importance in marketing analytics.
- c) Write the concept of Statistical Analysis and Hypothesis Testing.

P.T.O.

Q3) Answer any 1 question. [10]

- a) Discuss how HR analytics can improve employee performance measurement. Also provide examples of key metrics that can be utilized.
- b) Explain the steps involved in Analytical Decision Making Process.

Q4) Answer any 1 question. [10]

- a) Explain how supply chain analytics can enhance logistics management.
- b) Discuss the role of predictive analytics in improving health outcomes with an example.

Q5) Answer any 1 question. [10]

- a) Explain the role of financial analytics in evaluating the risk and return of investment portfolios, and what key metrics would you rely on to assess the overall financial health of an organization?
- b) Discuss the role of analytics in enhancing agricultural productivity.



Total No. of Questions : 5]

SEAT No. :

PE5900

[Total No. of Pages : 2

[6553]-107

F.Y. M.B.A. (IT)

**ECO-507-MJ GC - 07 : E - COMMERCE
(2024 Credit Pattern) (Semester - I)**

Time : 2 Hours]

[Max. Marks : 50

Instructions to the candidates:

- 1) All Questions are compulsory.*
- 2) Each Question having 10 marks*
- 3) Figures to the right indicate marks for individual questions.*

Q1) Give the answers in short (Solve any 5)

[5×2=10]

- a) Define e-Banking
- b) Explain Domain Name
- c) Explain the term RTGS
- d) Define protocol
- e) Explain cookies in websites
- f) Most commonly used e-Commerce website any four in India
- g) List any two B2B websites
- h) Technological advantages of e-commerce

Q2) Explain in brief (Solve any 2)

[2×5=10]

- a) Differentiate between e-Commerce & e-Business
- b) List any four e-Payment methods
- c) Explain social media commerce

P.T.O.

Q3) Solve in details (Solve any 1)

[1×10=10]

- a) Difference between various e-Banking payment methods?

OR

- b) Explain Pre-requisite for successful e-commerce website development.

Q4) Solve and do analysis (Solve any 1)

[1×10=10]

- a) Explain the process of shopping cart on B2C website and what changes would you like to suggest in existing method.

OR

- b) Explain benefits of m-commerce to the companies and Government.

Q5) Application oriented questions (Solve any 1)

[1×10=10]

- a) To develop B3B and B2C website for your business what measures are required for better optimization, scalability and performance?

OR

- b) When you look to www.ebay.com? what's the wrong with ebay no performing well as compare to www.amazon.com. Do your assumption?



Total No. of Questions : 5]

SEAT No. :

PE5901

[Total No. of Pages : 2

[6553]-108

F.Y. M.B.A. (Information Technology)

IKS 508 MJ-GC- 08 : INDIAN KNOWLEDGE SYSTEMS

(2024 Credit Pattern) (Semester - I)

Time : 2½Hours]

[Max. Marks : 50

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Each question carries equal marks.*

Q1) Answer any 5 (2 marks each)

[10]

- a) Define the concept 'Servant Leadership'.
- b) Explain 'Team dynamics'.
- c) What is Leadership in adversity?
- d) Explain 'resilience and emotional intelligence.
- e) Define the principles of governance in Shivaji Maharaj's kingdom.
- f) Define 'Egalitarianism'.
- g) Define the concept of 'Frugal Innovation'.
- h) What is 'Community Networks'?

Q2) Answer any 2 out of 3. (5 marks each)

[10]

- a) Explain the Role of values, ethics and spirituality in leadership and organizational culture?
- b) What were the Administration structures and decision-making processes of Shivaji Maharaj?
- c) What are the emerging trends in CSR in India, and how are they connected to traditional community practices?

P.T.O.

Q3) a) What is the difference between holistic decision-making frameworks and analytical approaches? **[10]**

OR

b) 'Jugaad innovations contribute to the socio-economic development of underserved or rural communities in India', explain with example? **[10]**

Q4) a) Explain the strengths and weaknesses of intuition-based decision-making and data-driven approaches in the context of modern organizations..**[10]**

OR

b) Explain with example the concept of the joint family system in Indian businesses? **[10]**

Q5) a) How can organizations encourage resourcefulness and creativity to drive innovation in their teams? **[10]**

OR

b) What are the key challenges faced by family and community businesses in India today? **[10]**



Total No. of Questions : 5]

SEAT No. :

PE-5902

[Total No. of Pages : 2

[6553]-201

**First Year M.B.A. (Information Technology)
(BPD551MJ) 201 GC-09: Business Process Domain
(2024 Pattern) (Semester - II)**

Time : 2½ Hours]

[Max. Marks : 50

Instructions to the candidates :

- 1) *All questions are compulsory.*
- 2) *Figure to right indicates full marks.*
- 3) *Draw neat, labelled diagram wherever necessary.*
- 4) *Assume data if necessary.*

Q1) Solve the following (Any five) :

[10]

- a) What is Product Life Cycle(PLC)?
- b) Explain the concepts Manpower and Time.
- c) Explain vendor analysis.
- d) Explain Capacity Requirements Planning for Equipment.
- e) Explain shop floor control.
- f) Explain the term bill.
- h) Explain the term Invoice.

P.T.O.

Q2) Answer the following (Any TWO) : **[10]**

- a) Explain emerging trends in retail marketing.
- b) How customer order purchasing is performed.
- c) Explain sales analysis network.

Q3) Answer the following (Any ONE) : **[10]**

- a) List and explain various recruitment techniques.
- b) Explain employee performance appraisal is being conducted.

Q4) Answer the following (Any ONE) : **[10]**

- a) State various rules for Rules for Journal entries.
- b) Explain different types of Types of ratio with examples.

Q5) Answer the following (Any ONE) : **[10]**

- a) Explain Demand forecasting and Planning.
- b) Explain the concept of CRM with example.



Total No. of Questions : 5]

SEAT No. :

PE5903

[Total No. of Pages : 2

[6553]-202

F.Y. M.B.A. (IT)

DMA552 MJ GC-10 : DIGITAL MARKETING

(2024 Credit Pattern) (Semester - II)

Time : 2½ Hours]

[Max. Marks : 50

Instructions to the candidates:

- 1) All questions are compulsory.*
- 2) Each question having 10 marks.*
- 3) Figures to the right indicate full marks.*

Q1) Answer the following questions (any five)

[5×2=10]

- a) What is advertisement?
- b) What is Google Analytics?
- c) What is LEO?
- d) What is C2C (Consumer-to-Consumer) e-commerce?
- e) What is the purpose of mobile business networks?
- f) Give two techniques for effective email marketing.
- g) What is RSS used for in digital marketing?
- h) What do you mean by online shopping?

Q2) Answer any two.

[2×5=10]

- a) What is Social Commerce? Explain its advantages and disadvantages.
- b) Compare Mailchimp and Campaign Monitor?
- c) Explain the elements of E-commerce?

P.T.O.

Q3) Solve the following :

[10]

- a) Explain characteristics, merits and demerits of M-Commerce?

OR

- b) How can Google tools like Analytics, Maps, and Places help promote a brand online?

Q4) Solve the following :

[10]

- a) What are the main design considerations when crafting an e-mail?

OR

- b) Design a simple SEO plan for a small online clothing store that includes on-page and off-page SEO techniques?

Q5) Solve the following :

[10]

- a) Explain the steps involved in setting up and optimizing a YouTube channel for business use, including branding and customization.

OR

- b) Discuss the role of F-Commerce (Facebook), LinkedIn, and M-Commerce (Mobile) in online advertising and their impact on business.

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Total No. of Questions : 5]

SEAT No. :

PE-5904

[Total No. of Pages : 2

[6553]-203

M.B.A. (IT)

**GC - 11 : ENTERPRISE RESOURCE PLANNING
(2024 Pattern) (Semseter - II) (ERP 553 MJ)**

Time : 2½ Hours]

[Max. Marks : 50

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Each Question having 10 marks.*
- 3) *Figures to the right indicate full marks.*

Q1) Answer any five in short.

[5 × 2 = 10]

- a) Need of BPR
- b) MRP - II
- c) Aims of SCM
- d) Oracle fusion Model
- e) Define ERP
- f) CRM Components
- g) Roles of integration ERP modules

Q2) Solve any two (each of 5 Marks)

[2 × 5 = 10]

- a) What are characteristics of ERP?
- b) Explain the ERP Architecture?
- c) Benefits and limitation of system integrations?

Q3) Solve any one of the following-

[1 × 10 = 10]

- a) What is SAP? Explain the different module of SAP with example.
- b) Differentiate between Logical viz Physical system integration.

P.T.O.

Q4) Solve any one of the following- **[1 × 10 = 10]**

- a) What do you mean by ERP Architecture? Explain different types of ERP Architecture with diagram.
- b) List to 10 vendors of ERP. Evaluation criteria for ERP package selections.

Q5) Solve any One Case the following: **[1 × 10 = 10]**

- a) SAP R/3, an enterprise-wide information system, was designed to coordinate resources, information, and activities for business processes like order fulfillment and HR management, and its current successor is SAP S/4HANA. Discuss its purpose and key features for implementation in Manufacturing industries.

OR

- b) **ERP Case Study #2: N&N Moving Supplies**

N&N Moving Supplies, a family-run distributor of moving equipment and supplies, successfully implemented an ERP system after expanding from one location in Georgia to three locations in multiple states and more than quadrupling its workforce.

Running on QuickBooks and a third-party payroll provider, it was nearly impossible to keep accurate time records and reconcile payroll with general ledger accounts. So, N&N turned to ERP to manage its accounting and payroll processes. During the implementation process for NetSuite ERP, N&N worked with a NetSuite partner, NOVA time, to add a time-clock solution to the main system. Discuss its purpose and key features after implementation of ERP System.



Total No. of Questions : 5]

SEAT No. :

PE5905

[Total No. of Pages : 2

[6553]-204

First Year M.B.A. (IT)

**ORA 554 MJ-GC-12 (204) : ORACLE
(2024 Credit Pattern) (Revised) (Semester - II)**

Time : 2½ Hours]

[Max. Marks : 50

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Each question has 10 marks.*
- 3) *Figure to the right indicates full marks.*

Q1) Solve any two.

- a) List all Joins and explain any one with example. **[5]**
- b) What is mean by constraints and explain any one with example. **[5]**
- c) List different numeric functions available in PL/SQL and explain any one with example. **[5]**

Q2) Consider the following table to solve any five of the following SQL queries.**[10]**

STUDENT (std_id, std_name, std_city)

COURSE (cor_id, cor_name, cor_fee)

REGISTRATION (std_id, cor_id, date_of_registration)

- a) Add one column 'advance_fees_paid' in the REGISTRATION table.
- b) Update 'advance_fees_paid' with 2000 for all students.
- c) Display students group by city.
- d) Display the course name which has minimum fee.
- e) Delete the student record whose name start with 'a'.
- f) Display the name of students who have registered for more than two courses.
- g) Increase course fee for all courses by 20%.
- h) Display list of courses whose fee is between 25000 to 50000.

P.T.O.

Q3) Solve any two.

- a) Explain ‘%ROWTYPE’ with example. [5]
- b) Explain user-defined exception in PL/SQL. [5]
- c) Explain table attributes. [5]

Q4) Solve any one.

- a) Write a function to check a number is prime or not. Also raise exception if negative number given. [10]
- b) Write a cursor to display top five salaried Employee detail. [10]

Q5) Write short note on following. (any two)

- a) DBCA to delete database. [5]
- b) Oracle database Architecture. [5]
- c) Oracle database Shut Down process. [5]



Total No. of Questions : 5]

SEAT No. :

PE-5906

[Total No. of Pages : 2

[6553]-205

M.B.A. (IT)

**GC - 13 : ORGANISATIONAL BEHAVIOUR
(2024 Pattern) (Semseter - II) (OBE555MJ)**

Time : 2 Hours]

[Max. Marks : 50

Instructions to the candidates:

- 1) *All questions carry equal marks.*
- 2) *Draw neat diagrams wherever needed.*

Q1) Attempt any five out of eight:

[10]

- a) Define Organizational Behaviour.
- b) Define Learning in OB.
- c) What do you mean by perception.
- d) What is employee engagement.
- e) Define attitude and its components.
- f) Mention any two types of leadership styles.
- g) State two types of organizational culture.
- h) Define perception and name two influencing factors.

Q2) Attempt any two out of three:

[10]

- a) Explain Maslow's Hierarchy of Needs.
- b) Describe the Myers-Briggs Type Indicator.
- c) Short note on Types of culture in organization.

Q3) Answer any one out of two:

[10]

- a) Discuss Kurt Lewin's Three-Step Model for Organizational Change with a practical example.

OR

- b) Define Perception. Explain the perception process in detail with examples.

P.T.O.

Q4) Answer any one out of two: [10]

- a) Explain the importance of organizational culture in shaping employee behavior.

OR

- b) What are the major forces that act as stimulants for organizational change? Illustrate with examples.

Q5) Answer any one out of two: [10]

- a) An IT organization wants to improve team performance. Discuss how it can use team-building and group development models to achieve this.

OR

- b) What is attitude? Discuss its components and the importance of attitude in the workplace.



Total No. of Questions : 5]

SEAT No. :

PE5907

[Total No. of Pages : 2

[6553]-206

F.Y. M.B.A. (IT)

**BRM 556 MJ-(RM-01) : BUSINESS RESEARCH METHODOLOGY
(2024 Credit Pattern) (Semester - II)**

Time : 2 Hours]

[Max. Marks : 50

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Figures to the right indicate marks for question/sub question.*

Q1) Solve any five:

[10]

- a) Define Null hypothesis in research.
- b) Write any two characteristics of scientific research.
- c) Define Copyright.
- d) Define Hypothesis in Research.
- e) What is Probability Sampling?
- f) What is Chi Square Test?
- g) Define Research Design.
- h) What is Bivariate Analysis?

Q2) Solve any two:

[10]

- a) Differentiate between Qualitative research and Quantitative research.
- b) Define Primary Data. Explain its advantages and disadvantages over secondary data.
- c) Write one examples of the scales given below:
 - i) Semantic Differential Scale
 - ii) Ratio Scale
 - iii) Likert Scale
 - iv) Graphic Rating Scale
 - v) Constant Sum Scale

P.T.O.

Q3) Solve any one:

[10]

- a) Explain the process of business research in detail.
- b) Prepare hypothesis (null & alternate) for following situations.
 - i) Researcher wants to understand whether quality of work is associated with qualification.
 - ii) Company wants to understand the impact of non-monetary benefits on employee satisfaction.

Q4) Solve any one:

[10]

- a) Find the mode of following data, using a histogram:

Monthly Income (₹'000)	20-30	30-40	40-50	50-60	60-70	70-80	80-90
No. of Employees	10	25	40	65	80	45	20

- b) A sample 16 MBA graduate of a college was obtained and asked for their starting salary. The mean monthly salary was found to be Rs. 44,800 with standard deviation Rs. 960. The past data on the starting salary has given a mean value of Rs. 45,000.

Using 5 % level of significance, can we conclude that average salary is differ from Rs. 45,000?

Given that Calculated t- value =0.83

Tabulated t-value =2.131

Q5) Solve any one:

[10]

- a) A consumer durable company is planning to launch a new type of washing machine. The company wanted to conduct a survey to understand how consumer select a brand of washing machine. Draft a research proposal to collect the relevant data from consumer.
- b) Develop a questionnaire to understand the problem faced by railway commuters of Mumbai City.



Total No. of Questions : 5]

SEAT No. :

PE5908

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[6553]-301

S.Y. M.B.A. (IT)

SPM601MJ : SOFTWARE PROJECT MANAGEMENT

(2024 Credit Pattern) (Semester - III)

Time : 2½ Hours]

[Max. Marks : 50

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Figures to the right indicate full marks.*

Q1) Answer the following: (Any Five)

[5×2=10]

- a) Compare software projects and other engineering projects with one example.
- b) Why is defining objectives an important step in project planning?
- c) How the COCOMO model helps in predicting effort compared to expert judgment.
- d) Explain why software projects are more vulnerable to risks compared to other projects.
- e) Why is risk closure important at the end of a project?
- f) What is the main purpose of using PERT in risk management?
- g) Define Capability Maturity Model (CMM). List any two levels of the SEI CMM.

Q2) Answer the following: (Any Two)

[2×5=10]

- a) Explain why effort estimation is important in software project management.
- b) How does technical risk differ from organizational risk?
- c) Explain why reliability is considered a key attribute of software quality.

P.T.O.

Q3) Answer the following: (Any One)

[10]

- a) Apply the principles of project planning to design a plan for a software project aimed at developing a mobile banking app. Discuss how evaluation would ensure its success.
- b) Apply function point analysis to estimate the size of a library management system. Demonstrate how object points and procedural code complexity affect the estimation.

Q4) Answer the following: (Any One)

[10]

- a) Analyze the strengths and weaknesses of expert judgment and analogy-based estimation techniques. In what situations would each be more reliable, and why?
- b) Analyze how the SEI Capability Maturity Model (CMM) improves organizational software processes. Compare the impact of lower maturity levels with higher maturity levels on project outcomes.

Q5) Answer the following: (Any One)

[10]

- a) Evaluate the strengths and weaknesses of the COCOMO model in predicting effort. How does it compare with group-based techniques like Delphi in terms of accuracy and bias reduction?
- b) Explain the difference between technical risks and organizational risks in software project management. Support your answer with suitable real-world examples for each.



Total No. of Questions : 5]

SEAT No. :

[Total No. of Pages : 2

PE5909

[6553]-302

S.Y. M.B.A. (IT)

CIS-602-MJ : CLOUD INFRASTRUCTURE & SERVICES

(2024 Credit Pattern) (Semester - III)

Time : 2½ Hours]

[Max. Marks : 50

Instructions to the candidates :

- 1) All questions are compulsory.*
- 2) Each question having 10 marks.*
- 3) Figures to the right indicate full marks.*

Q1) Define the following term (Any five) :

[5×2=10]

- a) SaaS
- b) Firewall
- c) Virtual Machine
- d) Serverless computing
- e) Auto-scaling
- f) Cloud computing
- g) Hypervisor

Q2) Answer any two of the following :

[2×5=10]

- a) Describe what is Public Cloud & its Advantages?
- b) Explain the characteristics & benefits of cloud computing.
- c) Describe components of cloud architectures?

P.T.O.

Q3) Answer any one of the following :

[1×10=10]

- a) Describe the cloud storage models in details.
- b) Explain the virtualization technologies & its type of virtualization in details.

Q4) Answer any one of the following :

[1×10=10]

- a) Explain Identity and access management in details.
- b) Explain major cloud security issue & its challenges.

Q5) Answer any one of the following :

[1×10=10]

- a) Explain cloud service management and optimization.
- b) Explain the concept of edge computing & discuss its role as an emerging trend in cloud computing.



Total No. of Questions : 5]

SEAT No. :

PE5994

[Total No. of Pages : 2

[6553]-303

S.Y.M.B.A. (Information Technology)

ECS-602-MJ : ESSENTIALS OF CYBER SECURITY

(2024 Credit Pattern) (Revised) (Semester-III)

Time : 2½ Hours]

[Max. Marks : 50

Instructions to the candidates:

- 1) All questions are compulsory.*
- 2) Figures to the right indicate full marks.*

Q1) Solve any five:

[10]

- a) Define cyber security with an example.
- b) What is a zero-day vulnerability?
- c) Define hashing.
- d) What is ransomware?
- e) Define certificate authority (CA).
- f) What is the shared responsibility model in cloud security?
- g) Define insider threat.
- h) What is TLS?

Q2) Solve any Two:

[10]

- a) Explain different types of cyber threats such as malware, APTs, and insider threats.
- b) Describe authentication and authorization with suitable examples.
- c) Explain secure protocols like HTTPS, SSH and IPsec in detail.

P.T.O.

Q3) Explain Public Key Infrastructure (PKI) and discuss digital signatures, key management and certificate validation. **[10]**

OR

Explain firewalls, VPNs, IDS and IPS as key network security mechanisms. **[10]**

Q4) Describe various challenges in securing IoT and mobile devices. Explain any four security measures. **[10]**

OR

Explain the concept of defense-in-depth architecture and discuss the role of endpoint security tools. **[10]**

Q5) A mid-sized e-commerce company begins to face frequent DDoS attacks, forcing downtime and loss of revenue. During investigation, the security team also discovers that attackers exploited weak API security and outdated TLS configurations, exposing customer information during transactions. The company lacked proper monitoring and had no incident response plan. **[10]**

- a) Identify the types of attacks involved and explain how they work.
- b) List the vulnerabilities present in the organization.
- c) Suggest the incident response steps the company should take.
- d) Recommend preventive cybersecurity measures to strengthen their security posture.

OR

Explain ISO 27001 and NIST cybersecurity framework. Discuss their importance as best practices in cybersecurity governance. **[10]**



Total No. of Questions : 5]

SEAT No. :

PE5910

[Total No. of Pages : 2

[6553]-304

S.Y. M.B.A. (IT)

PPR 602 MJ - 302 : PYTHON PROGRAMMING

(2024 Credit Pattern) (Semester - III)

Time : 2½ Hours]

[Max. Marks : 50

Instructions to the candidates :

- 1) All questions are compulsory.*
- 2) Figures to the right indicate full marks.*

Q1) Solve any five :

[5×2=10]

- a) Explain any two real-world applications of Python.
- b) What is an IDE? Name any two IDEs commonly used for Python.
- c) Write any two differences between a list and a Tuple in Python.
- d) What is a variable in Python? Given an example.
- e) Define a Dictionary in Python. Write a small example of a dictionary.
- f) What is the purpose of the input() function? Give a sample code using it.
- g) Name any two arithmetic operators and give one example each.
- h) What is meant by Python syntax? Give examples of any two syntax rules.

Q2) Solve any two :

[2×5=10]

- a) Explain the use of if-elif-else statements with a suitable example. How do they help in controlling the flow of a program?
- b) What are user-defined functions in Python? Write a function with arguments and return value. Also explain the concept of variable scope in Python.
- c) Write a Python program to read data from a file and handle the exception if the file is not found. Explain the purpose of using try and except blocks.

P.T.O.

Q3) Solve any one : **[1×10=10]**

- a) Create a Python class named student with attributes such as roll_no, name, and marks (a list of subject marks).

Write methods to :

- accept student details
- calculate total and average marks
- display all details
- update marks of specific subject

Explain the concepts of objects, constructors, and instance variables with this example.

- b) Explain Python data structures with examples and write programs to demonstrate the following :
- i) Storing and modifying a list of employee names using various list operations.
 - ii) Creating a tuple and explaining where tuples are preferred over lists
 - iii) Using a set to remove duplicate values.
 - iv) Creating a dictionary of product details and performing add, update, and delete operations.
 - v) Using list comprehension to create a new list of squares of even numbers.

Q4) Solve any one : **[1×10=10]**

- a) Explain Object-Oriented Programming in Python with suitable examples and write programs to demonstrate the following :

- i) Defining a class with constructor and destructor
- ii) Creating objects and accessing methods
- iii) Implementing single-level and multi-level inheritance.

- b)
 - i) Write a program to demonstrate abstraction using an abstract class.
 - ii) Writing a simple program to perform data input and output (reading user input and printing results)
 - iii) Using Python's special methods such as `__init__`, `__str__`, and one more of your choice.

Q5) Solve any one : **[1×10=10]**

- a) Write a program using Matplotlib or seaborn to create a scatter Plot and a bar chart. Use 4 features to prepare charts.
- b) Write a program using Matplotlib or seaborn to create a Linechart and a Histogram. Use 4 features to prepare charts.



Total No. of Questions : 5]

SEAT No. :

PE5911

[Total No. of Pages : 2

[6553]-305

S.Y.M.B.A. (IT)

BNE 604 MJ : BASICS OF NETWORKING

(2024 Credit Pattern) (Semester - III)

Time : 2½Hours]

[Max. Marks : 50

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Figures to the right indicate full marks.*

Q1) Answer any 5 out of 8

[10]

- a) What is Ethernet 802.3?
- b) What is the use of an RJ45 connector?
- c) What is the function of a network switch?
- d) What is Active Directory Domain Services (AD DS)?
- e) Define Group Policy in Windows Server.
- f) What is DHCP and why is it used?
- g) What happens when a server is promoted to a Domain Controller?
- h) What is Mesh Topology?

Q2) Answer any 2 out of 3

[10]

- a) What is a VPN? Explain how it works..
- b) Explain Star, Bus, Ring and Mesh topologies with diagrams (description only).
- c) Describe TCP/IP architecture and compare IPv4 and IPv6.

P.T.O.

Q3) Answer any 1 **[10]**

- a) Explain PPTP, L2TP, and IPSec tunneling protocols in detail.
- b) Explain FTP, Telnet, HTTP and HTTPS with working and uses.

Q4) Answer any 1 **[10]**

- a) A small marketing company has employees who need to send and receive emails for client communication. Some employees use only a single office computer, while others access their email from a laptop, tablet, and smartphone. The IT administrator wants to ensure that emails are delivered reliably, can be accessed from multiple devices, and are securely sent and received.
 - i) Explain how SMTP is used in this company to send emails from employees to clients.
 - ii) Compare how POP3 and IMAP would handle email retrieval for employees who use a single device versus multiple devices.
 - iii) Describe a workflow showing how an email travels from the sender to the recipient and how it is accessed using POP3 or IMAP.
- b) Discuss Ethernet frame formats. IEEE 802.2, and IEEE 802.3.

Q5) Answer any 1 **[10]**

- a) A mid-sized IT company is planning to upgrade its server infrastructure to Windows Server 2022. The IT manager wants to understand how the new server will improve security, performance, and cloud integration compared to their older server version. The team also wants to know about enhanced management tools and virtualization support.
 - i) Describe the key features of Windows Server 2022 that would benefit the company in terms of security, performance, and cloud integration.
 - ii) Explain how these features can improve day-to-day server management and virtualization in the company.
- b) Explain Active Directory Roles in Windows Server 2022.



Total No. of Questions : 5]

SEAT No. :

[Total No. of Pages : 2

PE5912

[6553]-306

S.Y.M.B.A. (IT)

**IED 604 MJ : INNOVATION & ENTREPRENEURSHIP DEVELOPMENT
(2024 Credit Pattern) (Semester - III)**

Time : 2½Hours]

[Max. Marks : 50

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Figures to the right indicate full marks.*

Q1) Short answers (Any 5):

[10]

- a) Define Creativity.
- b) What is a Tech. Startup?
- c) Revenue Stream.
- d) Cost structure components.
- e) A/B Testing.
- f) ESG.
- g) Prototype
- h) Indian IT startups examples.

Q2) Answer any 2 out of 3:

[10]

- a) Disruptive vs Incremental innovation.
- b) Channels & customer relationships in BMC.
- c) Cash flow management.

P.T.O.

Q3) Answer any 1 out of 2: **[10]**

a) Role of IT in entrepreneurial ecosystems.

OR

b) GDPR & IT Act implications.

Q4) Answer any 1 out of 2: **[10]**

a) Prototyping steps.

OR

b) Funding sources.

Q5) Answer any 1 out of 2: **[10]**

a) Scaling techniques.

OR

b) Sustainability & circular economy.



Total No. of Questions : 5]

SEAT No. :

PE12118

[6553]-307

[Total No. of Pages : 2

S.Y.M.B.A. (Information Technology)

**PDW604MJ 304 : PROGRAM AND DESIGN WITH ASP.NET
(2024 Credit Pattern) (Semester - III)**

Time : 2½ Hours]

[Max. Marks : 50

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Draw neat diagrams whenever necessary.*
- 3) *Every question carries 10 marks.*

Q1) Explain the term Five out of Eight. (2 Marks Each) [10]

- a) What is Methods in asp.net?
- b) ORM (Object Relational Mapping).
- c) JIT & CLR
- d) jQuery
- e) OOPs in Dot.net
- f) Solution & Namespace
- g) Default.aspN
- h) OLEDB

Q2) Answer any 2 out of 3. (5 Marks Each) [10]

- a) Explain MVC control in brief.
- b) Explain RESTful services and with use of HTTP methods GET, POST, PUT, DELETE with examples.
- c) Explain the server validation controls with example.

Q3) a) Explain the overview of ASP.NET Core in detail with features, benefits, differences from ASP.NET. [10]

OR

- b) Explain Web API Controllers in ASP.NET Core in detail. [10]

P.T.O.

Q4) a) Describe the core concepts of ASP.NET Core, Project structure & the roles of Program.cs. **[10]**

OR

b) Explain ViewData, ViewBag and TempData, Use of Razor views with suitable examples. **[10]**

Q5) a) Explain the .NET framework and ADO.NET in detail. **[10]**

OR

b) Create an ASP.NET Core MVC application and write a simple Razor view to display your name and current date. Show the controller action and the corresponding view code. **[10]**



Total No. of Questions : 5]

SEAT No. :

PE5913

[Total No. of Pages : 2

[6553]-308

S.Y.M.B.A. (I.T.)

**BMA 605 MJ : BASICS OF MOBILE APPLICATION DEVELOPMENT
(2024 Credit Pattern) (Semester - III)**

Time : 2½ Hours]

[Max. Marks : 50

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Each question having 10 marks.*

Q1) Solve any five of the following.

- a) Explain attributes of ImageView.
- b) Enlist Android versions.
- c) Explain Relative Layout with example.
- d) Explain role of Xcode.
- e) List two major differences between Android & IOS operating system.
- f) What is role of Android OS in application development.
- g) Explain Events of Button view.
- h) List out possible values of inputType attribute of EditText.

Q2) Write short note on (any two)

- a) SDK
- b) Storyboard
- c) Crossplatform in Android.

Q3) Solve any one of the following.

- a) Explain use and importance of responsive layouts in mobile App design.
- b) Explain design philosophies of Android and IOS focusing on material Design.

P.T.O.

Q4) Solve any one from following.

- a) Explain MVC architecture in detail.
- b) What is activity? Explain activity life cycle.

Q5) Solve any one from following.

- a) Design and develop an android application for “Aadhar Card” registration using suitable fields. Write a code to insert the record in data base table and display it to the user on another activity. (Write Xml and Java file contents)
- b) Explain the role and importance of networking in mobile apps. Also explain RESTful APIs.

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Total No. of Questions : 5]

SEAT No. :

PE5995

[Total No. of Pages : 2

[6553]-309

S.Y.M.B.A. (IT)

**305 : FDP 605 MJ : FRAUD DETECTION & PREVENTION
(2024 Credit Pattern) (Semester - III)**

Time : 2½ Hours]

[Max. Marks : 50

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Draw neat labeled diagram wherever necessary.*
- 3) *Figures to the right indicate full marks.*

Q1) Write answers in short (any 5 questions)

[5×2=10]

- a) What is encryption?
- b) Give the impact of social engineering attacks.
- c) Give any four precautionary measure to protect from IT fraud.
- d) What is blockchain?
- e) Define cybercrime.
- f) What is the role of IDS/IPS in fraud detection?
- g) Define machine learning.
- h) What is CCPA?

Q2) Answer any 2 questions.

[2×5=10]

- a) Explain legal responsibilities of IT professionals and corporate leaders in preventing IT frauds.
- b) Discuss the process of designing secure IT systems and network architecture.
- c) What is the role of digital identify theft and data breaches in IT fraud? Explain.

P.T.O.

Q3) Answer any 1 question [10]

- a) Illustrate how IT fraud can occur in e-commerce, banking, and enterprise systems using real-world scenarios.
- b) Evaluate the effectiveness of existing cyber security frameworks in preventing IT fraud.

Q4) Answer any 1 question. [10]

- a) Apply fraud analysis techniques to identify vulnerabilities in an online banking system.
- b) Analyze the relationship between data breaches and the rise in IT fraud incidents across industries.

Q5) Answer any 1 question. [10]

- a) Explain how social engineering attacks exploit human behavior to commit IT fraud.
- b) Identify IT fraud compliance and governance standards like ISO 27001 and COBIT.

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Total No. of Questions : 5]

SEAT No. :

PE5914

[Total No. of Pages : 2

[6553]-310

**S.Y.M.B.A. (Information Technology)
NSE605MJ : NETWORK SECURITY
(2024 Credit Pattern) (Semester - III)**

Time : 2½ Hours]

[Max. Marks : 50

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Figures to the right indicate full marks.*

Q1) Write answers in short. (any 5 out of 8 questions)

[5×2=10]

- a) Why is availability considered equally important as confidentiality in digital business?
- b) Differentiate between perimeter security and internal security.
- c) What is a DMZ and why is it used?
- d) What is the avalanche effect in cryptography?
- e) Define access control lists (ACLs).
- f) What is the primary limitation of packet-filtering firewalls?
- g) Define IDS signature.
- h) What is a proxy firewall?

Q2) Answer any 2 out of 5 questions.

[2×5=10]

- a) Explain how the CIA triad applies to an online banking system with suitable examples.
- b) What are the challenges in designing a multi-layered security architecture for cloud-based networks?
- c) Compare symmetric and asymmetric encryption based on speed, key management, and security level.
- d) Explain how SSO improves user productivity and reduces helpdesk load.
- e) Describe how anomaly - based IDS detects unknown attacks.

P.T.O.

Q3) Discuss the interrelationship between confidentiality, integrity, and availability. What failures in the CIA triad led to well - known cybersecurity breaches?[10]

OR

Design a secure network architecture for a medium-sized enterprise the hosts both internal applications and customer - facing web services. Justify each architectural choice. [10]

Q4) Explain the key components of PKI and discuss how PKI addresses authentication, non-repudiation, and trust management in enterprise networks.[10]

OR

Compare and contrast different access control models (DAC/MAC/RBAC). Which model is most suitable for banking systems and why? [10]

Q5) With a suitable architecture, explain how firewalls and IDS/IPS work together to build a secure enterprise network. [10]

OR

A company notices unusual outgoing traffic. How can IDS logs help in identifying the root cause? [10]

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Total No. of Questions : 5]

SEAT No. :

PE-5915

[Total No. of Pages : 2

[6553]-311

S.Y. M.B.A. (IT)

**EHA-606-MJ : ETHICAL HACKING
(2024 Pattern) (Semester - III) (Theory)**

Time : 2½ Hours]

[Max. Marks : 50

Instructions to the candidates:

- 1) All questions are compulsory.
- 2) Figures the right indicate marks for questions.

Q1) Solve any five :

[5 × 2 = 10]

- a) Explain ethical hacking.
- b) What is HTTP & why is it important.
- c) Explain firewall.
- d) Explain VPNS .network defense tool.
- e) What is mean by XSS?
- f) What is SQL injection?
- g) What is mean by penetration testing?
- h) Explain the term "incident response".

Q2) Attempt any two :

[2 × 5 = 10]

- a) Explain scope and importance of Ethical Hacking.
- b) Explain the TCP/IP modes and its relevance in network communication.
- c) Describe any three common cyber threats with practical example.

Q3) Answer the following :

[10]

- a) Explain any five access and reporting tools in detail.

OR

- b) Explain the five phases of penetration testing and discuss how each phase contributes to the overall security assessment of an organization. Illustrate your answer with example of tools used at each phase in organization.

P.T.O.

Q4) Answer the following : [10]

- a) Explain software security frameworks & challenges of mobile application security with example.

OR

- b) How does misconfiguration lead to security breaches? Provide & explain with industry example.

Q5) Answer the following : [10]

- a) Discuss the major provisions and amendments of the Information Technology Act, 2000 in the context of cybercrime prevention.

OR

- b) Evaluate the role of National and Global security laws in promoting responsible, secure and sustainable technology usage.



Total No. of Questions :5]

SEAT No. :

PE5996

[Total No. of Pages : 2

[6553]-312

S.Y.M.B.A. (IT)

PHP606 MJ-PHP PROGRAMMING

(2024 Credit Pattern) (Semester-III)

Time : 2½ Hours]

[Max. Marks : 50

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Figures to the right indicate full marks.*

Q1) Solve any five.

[10]

- a) Write any two features of PHP.
- b) What is a built-in function?
- c) What is a cookie?
- d) What is PHP-MySQL connectivity?
- e) What is encapsulation?
- f) What is isset () function?
- g) What is constructor?
- h) What is PHP framework?

Q2) Solve any two.

[10]

- a) Explain PHP data types in detail.
- b) Explain user-defined functions with example.
- c) Explain steps to connect PHP with MySQL.

P.T.O.

Q3) Solve any one **[10]**

- a) Compare client-side and server-side scripting with examples.
- b) Explain database security issues in PHP.

Q4) Solve any one. **[10]**

- a) Explain object-oriented programming concepts in PHP with examples.
- b) Write a PHP program to demonstrate indexed, associative, and multidimensional arrays.

Q5) Solve any one. **[10]**

- a) Explain string and date-time functions in PHP with examples.
- b) How to generate simple random password from a given string using PHP?



Total No. of Questions : 5]

SEAT No. :

PE-5916

[Total No. of Pages : 2

[6553]-313
S.Y. M.B.A. (IT)
SDT 606MJ : SERVER AND DESKTOP TECHNOLOGY
Cloud Computing
(2024 Pattern) (Semester - III)

Time : 2½ Hours]

[Max. Marks : 50

Instructions to the candidates :

- 1) All questions are compulsory.*
- 2) Each question having 10 marks.*
- 3) Figures to the right indicate marks for individual questions.*

Q1) Give the answers in short (Solve Any 5) :

[5 × 2 = 10]

- a) Define windows server 2022.
- b) What is server core installation?
- c) Define Active Directory Domain Services (ADDS)
- d) What is a Group Policy Object (GPO)?
- e) Define DHCP lease.
- f) What is powershell?
- g) What is DNS Zone?
- h) Define MFA (Multi - Factor Authentication)

P.T.O.

Q2) Solve Any Two of the following :

[2 × 5 = 10]

- a) Explain the features and benefits of Windows Server 2022.
- b) Explain Server Installation methods: GUI, server core and Nano server.
- c) Describe the steps for initial server configuration.

Q3) Solve Any One of the following :

[1 × 10 = 10]

- a) Explain in detail the installation and configuration of Active Directory Domain Services.
- b) Explain users & group management in Active Directory with suitable examples.

Q4) Solve Any One of the following :

[1 × 10 = 10]

- a) Explain DNS server configuration and troubleshooting DNS using nslookup.
- b) Explain DHCP scope creation, reservation and DHCP Failover configuration.

Q5) Answer Any One of the following :

[1 × 10 = 10]

- a) Explain windows server security features.
- b) Discuss the architecture of windows server administration using windows Admin center & Powershell automation.



Total No. of Questions : 5]

SEAT No. :

PE5917

[Total No. of Pages : 2

[6553]-314

S.Y. M.B.A. (Information Technology)

BTE-607-MJ : BLOCKCHAIN TECHNOLOGIES

(2024 Credit Pattern) (Semester - III)

Time : 2½ Hours]

[Max. Marks : 50

Instructions to the candidates :

- 1) All questions are compulsory.*
- 2) Figures to the right indicate full marks.*

Q1) Write answers in short (Any 5 out of 8) :

[5×2=10]

- a) Why can a decentralized blockchain still fail if most nodes behave honestly but the network layer is compromised?
- b) How does cryptography enable trust in a trustless network?
- c) What makes SHA-256 suitable for Proof of Work?
- d) What is gas in Ethereum and why can high gas fees slow down DApps adoption?
- e) State one risk of poorly written Solidity functions.
- f) How does a private key differ from a wallet password?
- g) What is the significance of nonce in mining?
- h) Why is blockchain not always the best solution for supply chain transparency?

Q2) Answer any 2 out of 5 questions :

[2×5=10]

- a) Compare centralized, decentralized, and distributed systems with real-world examples where each is preferable.
- b) Explain how Merkle Roots help maintain tamper-resistance in massive transaction datasets.
- c) Explain how events and modifiers in Solidity help control smart contract behavior.
- d) Compare Bitcoin's UTXO model with Ethereum's account-based model.
- e) Describe the double-spending problem with examples from centralized and decentralized systems.

P.T.O.

Q3) With a detailed architecture, explain how blockchain achieves immutability, transparency, and distributed trust. Evaluate scenarios where these features may become limitations. **[10]**

OR

Compare various consensus algorithms (PoW, PoS, DPoS, BFT). Which is more suitable for financial networks and why? **[10]**

Q4) Analyze the challenges in DApp scalability. Propose architectural improvements using Layer-2 or sharding. **[10]**

OR

Explain the complete lifecycle of a cryptocurrency transaction from wallet creation to confirmation on the blockchain. **[10]**

Q5) Discuss blockchain applications in finance, supply chain, healthcare, and IoT. Provide real case studies and business benefits. **[10]**

OR

A multinational logistics company wants to implement a blockchain-based supply chain system. **[10]**

- Identify major requirements.
- Propose a suitable blockchain platform.
- Describe the architecture, transaction flow, and benefits.



Total No. of Questions : 5]

SEAT No. :

PE5918

[Total No. of Pages : 2

[6553]-315

M.B.A.- II (Information Technology)

CST 607 MJ : CLOUD STORAGE

(2024 Credit Pattern) (Semester - III)

Time : 2½ Hours]

[Max. Marks : 50

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Each question having 10 marks.*
- 3) *Figures to the right indicate full marks.*

Q1) Solve the following terms (Any five)

[5×2=10]

- a) What is cloud storage?
- b) Challenges of cloud storage.
- c) Role of AWS in cloud storage.
- d) Define Hybrid cloud storage.
- e) Pay-as-you go-model in cloud storage.
- f) What is object storage?
- g) Advantage of using google cloud storage.

Q2) Answer any one of the following.

[1×10=10]

- a) Explain the cloud storage architecture with reference to block storage, object storage & file storage?
- b) Explain Distributed file systems used in cloud environments & discuss their key features.

Q3) Answer any one of the following.

[1×10=10]

- a) Describe tools used for managing cloud storage, with a focus on AWS-S₃ R Azure Blob storages.
- b) Describe the process of implementing data Backup & recovery in cloud storage environments.

P.T.O.

Q4) Answer any one of the following.

[1×10=10]

- a) Explain major cloud storage security risks & discuss the strategies used to mitigate them.
- b) Explain authentication and access control mechanism used to secure cloud storage system.

Q5) Answer any one of the following.

[1×10=10]

- a) Discuss cost optimization strategies used in cloud storage environments.
- b) Explain the role of automation and monitoring tools in Improving storage performance & Scalability?

* * *

Total No. of Questions : 5]

SEAT No. :

PE5919

[Total No. of Pages : 2

[6553]-316

Second Year M.B.A. (IT)

TCD-607-MJ : TEST CASE AND DESIGN TECHNIQUES

(2024 Credit Pattern) (Semester - III)

Time : 2½ Hours]

[Max. Marks : 50

Instructions to the candidates :

- 1) All questions are compulsory.*
- 2) Each questions having 10 marks.*
- 3) Figures to the right indicate full marks.*

Q1) Define the following terms (Any five)

[10]

- a) Issue
- b) Test closure
- c) Regression Testing
- d) Manual Testing
- e) Quality Assurance
- f) Alpha Testing
- g) Who does Testing
- h) User Interface Testing

Q2) Answer any two of the following.

[10]

- a) What is Fundamental of Test Process?
- b) What is Prioritization in Software Testing?
- c) What is Tester Workbench?

P.T.O.

Q3) Answer any one of the following. **[10]**

- a) Describe Origin of Defects in detail.
- b) Explain Equivalence Partitioning in Software Testing.

Q4) Answer any one of the following. **[10]**

- a) Describe how to execute test cases, Track Defect and Report Result in Testing.
- b) Describe Test Case Reduction while ensuring test coverage in Testing.

Q5) Answer any one of the following. **[10]**

- a) Write a case study on Mobile application Phone Pay and write the appropriate test cases on them.
- b) Designing test case in an Agile Software Development Environment.



Total No. of Questions : 5]

SEAT No. :

PE5920

[Total No. of Pages : 2

[6553]-317

S.Y.M.B.A. (Information Technology)

CCW 608 MJ : CLOUD COMPUTING WITH AWS

(2024 Credit Pattern) (Semester - III)

Time : 2½ Hours]

[Max. Marks : 50

Instructions to the candidates:

- 1) All questions are compulsory.*
- 2) Figures to the right indicate full marks.*

Q1) Write answers in short (any 5 out of 8 questions)

[5×2=10]

- a) What is SaaS? Give two SaaS examples of AWS?
- b) What do you mean by AWS Edge Locations, and which service primarily uses?
- c) How AWS Lambda is different from EC2?
- d) Compare object storage (S3) and block storage (EBS).
- e) How does Redshift differ from traditional relational databases?
- f) Describe API Gateway integration with Lambda.
- g) Explain inline policies vs managed policies.
- h) How does Server-Side Encryption (SSE) work in Amazon S3?

Q2) Answer any 2 out of 3 questions.

[2×5=10]

- a) Explain the components of a VPC.
- b) Describe Multi-AZ deployment in RDS.
- c) How would you design a cost-optimized storage strategy for infrequently accessed data?

P.T.O.

Q3) Answer any 1 question.

[10]

- a) Describe how KMS integrates with EBS, RDS, Lambda, and S3.
- b) How can you enforce mandatory MFA for sensitive IAM operations?

Q4) Answer any 1 question.

[10]

- a) Explain Cloud Watch Contributor Insights and anomaly detection.
- b) Discuss the role of AWS Cost Explorer in monitoring and analyzing AWS spending.

Q5) Answer any 1 question.

[10]

- a) Explain how CloudTrail integrates with Cloud Watch Logs and SNS for real-time security monitoring. provide an example use case.
- b) Describe the purpose of the AWS Billing Dashboard. What key billing information does it provide, and how can organizations use it to manage monthly AWS spending.



Total No. of Questions : 5]

SEAT No. :

PE5921

[Total No. of Pages : 2

[6553]-318

S.Y.M.B.A. (IT)

**CLA 608 MJ - 05 : CYBER LAWS (CYBER SECURITY & DATA
ANALYTICS)**

(2024 Credit Pattern) (Semester - III)

Time : 2½ Hours]

[Max. Marks : 50

Instructions to the candidates:

- 1) All Questions are compulsory.*
- 2) Each Question having 10 marks.*
- 3) Figures to the right indicate marks for individual questions.*

Q1) Give the answers in short (Solve any 5)

[5×2=10]

- a) Define Cyber Space
- b) List IPR in India
- c) Explain Cyber Squatting
- d) Define Digital Signature
- e) Define E-commerce
- f) Explain e-Governance
- g) List 4 countries where cyber laws implemented

Q2) Explain in brief (Solve any 2)

[2×5=10]

- a) List reasons of trademark disputes.
- b) What do you mean by patents rights?
- c) Explain what's E-contracts validity in India.

P.T.O.

Q3) Solve any one of the following.

[1×10=10]

- a) Explain the achievements and strengths of the IT Act 2000.

OR

- b) Explain the important provisions of patent Act 1970.

Q4) Solve any one of the following.

[1×10=10]

- a) Discuss the types of jurisdictions relevant in trademark disputes.

OR

- b) Discuss legal issues in cloud computing in personal data security.

Q5) Solve/discuss the following case (Solve any 1).

[1×10=10]

- a) A man used stolen credit card information to fraudulently purchase electronics from Sony's website, leading to his conviction under the Indian Penal Code. This case was pivotal (First case in India) as it established that the Indian Penal Code could be used for crimes not explicitly covered by the Information Technology Act, 2000. *Give Conviction as per your knowledge?*

OR

- b) The victim's email account password is stolen and the account is then misused for sending out malicious code (virus, worm, Trojan etc) to people in the victim's address book. The recipients of these viruses believe that the email is coming from a known person and run the attachments. This infects their computers with the malicious code. *Explain applicable Law and motive behind it.*



Total No. of Questions : 5]

SEAT No. :

PE5922

[Total No. of Pages : 2

[6553]-319

S.Y.M.B.A. (IT)

**MDA608 MJ : MONGO DATABASE
(2024 Credit Pattern) (Revised) (Semester - III)**

Time : 2½ Hours]

[Max. Marks : 50

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Figures to the right indicate full marks.*
- 3) *Draw neat, labelled diagram whenever necessary.*
- 4) *Assume Suitable Data if necessary.*

Q1) Solve the following (Any five):

[10]

- a) What is NoSQL?
- b) How do you start the MongoDB shell on a system after installation?
- c) What type of data format does Mongo DB use to store documents?
- d) Write any two features of MongoDB.
- e) What is sharding in MongoDB?
- f) Write any two use cases of MongoDB.
- g) What is the use of the mongod.conf file in MongoDB?
- h) What is the purpose of a replica set in MongoDB?

Q2) Answer the following (Any two):

[10]

- a) Explain any five logical or comparison operators used in MongoDB with examples.
- b) Write a note on indexing best practices in MongoDB.
- c) Write a short note on sorting and limiting queries in MonogoDB. Provide suitable examples.

P.T.O.

Q3) Answer the following (Any One) : [10]

- a) A “employees” collection has fields: name, salary, department, and city. Write MongoDB queries to:
- i) Find employees with salary greater than 50,000
 - ii) Display employees from the HR department
 - iii) Find employees who live in Mumbai
 - iv) Display employees with salary less than 25,000
 - v) Find employees from the Finance department who are from Pune.
- b) Explain backup and restore in MongoDB. Discuss different backup strategies, tools, and the procedures used to restore data safely.

Q4) Answer the following (Any One): [10]

- a) Explain the MongoDB Aggregation Framework in detail.
- b) Explain the MongoDB Data Model in detail.

Q5) Answer the following (Any One): [10]

- a) A retail company is having problems managing stock levels across multiple stores. They need to handle real-time product availability, avoid over-selling, and update inventory instantly during peak sales. They require a database that can support fast updates, real-time dashboards, and large-scale data growth. Explain how MongoDB can be used to design a real-time inventory management system for this company.
- b) A digital payment company needs to monitor millions of daily transactions to detect unusual patterns such as multiple failed attempts, sudden location changes, or abnormal spending. Discuss how MongoDB’s real-time data handling and scalable architecture can help build a fraud-detection system.



Total No. of Questions : 5]

SEAT No. :

PE5923

[Total No. of Pages : 2

[6553]-320

S.Y.M.B.A. (IT)

CRM609 MJ : CLOUD RISK MANAGEMENT

(2024 Credit Pattern) (Semester - III)

Time : 2½Hours]

[Max. Marks : 50

Instructions to the candidates:

- 1) All questions are compulsory.*
- 2) Each question having 10 marks.*
- 3) Figures to the right indicate full marks for individual questions.*

Q1) Solve (any Five)

[5×2=10]

- a) Cloud Risk Management.
- b) Define security risk in the context of cloud computing.
- c) List any two key components of the cloud risk management life cycle.
- d) What is meant by performance risk in cloud services?
- e) Name any two tools or methods used for cloud risk assessment.
- f) State any two financial risks associated with cloud adoption.

Q2) Write short note (any two)

[2×5=10]

- a) What is risk identification in cloud computing?
- b) Define qualitative risk assessment.
- c) What is the purpose of vulnerability scanning in cloud environment?

Q3) Solve any one

[10]

- a) Describe cloud security frame works such as NIST & ISO27001. How do they help organizations secure cloud environments?
- b) What is account hijacking in cloud computing? Describe its causes, impacts & prevention strategies.

P.T.O.

Q4) Solve any one

[10]

- a) Discuss the legal implications of cloud adoption, including intellectual property issues data sovereignty & data localization requirements.
- b) Explain compliance challenges in cloud computing with reference to GDPR, HIPAA, SOC2 & PCIDSS. Provide examples for each.

Q5) Solve the following (any one)

[10]

- a) Describe cloud-based data recovery methods & their significance in ensuring service availability.
- b) Explain the concept of RPO & RTO. How do they influence cloud DR Planning.



Total No. of Questions : 5]

SEAT No. :

PE5924

[Total No. of Pages : 2

[6553]-321

S.Y.M.B.A. (IT)

ETC609MJ : EMERGING TECHNOLOGY IN CYBER SECURITY

(2024 Credit Pattern) (Semester - III)

Time : 2½Hours]

[Max. Marks : 50

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Each question carries 10 marks.*

Q1) Answer any 5 out of 8.

[10]

- a) What is predictive analytics in cybersecurity?
- b) What is adversarial AI?
- c) State one ethical concern with using AI in cyber security.
- d) What is the main security challenge in cloud computing?
- e) What is Zero Trust Architecture (ZTA)?
- f) What is blockchain decentralization?
- g) Give one use case of blockchain in IoT security.
- h) What is multi-cloud security?

Q2) Solve any 2 out of 3.

[10]

- a) Describe blockchain principles and its applications in cyber security.
- b) What is the role of automation and orchestration in cloud security?
- c) Explain quantum computing's impact on cyber security and the need for post-quantum cryptography.

P.T.O.

Q3) Solve any 1.

[10]

- a) Describe the role of AI and ML in modern cyber security.
- b) A mid-sized e-commerce company experiences frequent cyber threats, including phishing attacks and unusual login attempts. The IT security team wants to predict potential attacks before they happen using data from network logs, user behavior, and past security incidents.
 - i) Explain what predictive analytics is and how it can be applied in cyber security for this company.
 - ii) Discuss the importance of predictive analytics in preventing cyber attacks and improving security measures.

Q4) Solve any 1.

[10]

- a) A cybersecurity firm uses AI systems to detect malware and phishing attacks. Recently, attackers have started manipulating input data to trick the AI into misclassifying threats as safe, allowing attacks to bypass security defenses. The IT manager wants the team to understand this problem and its implications.
 - i) Explain what adversarial AI is in the context of cyber security.
 - ii) Discuss the challenges and risks that adversarial AI poses to AI based security systems.
- b) What ethical issues arise from using AI in cyber security?

Q5) Solve any 1.

[10]

- a) Explain the steps involved in implementing Zero Trust Architecture.
- b) A logistics company is facing issues with data tampering, unauthorized access, and tracking of digital transactions across its supply chain. The IT manager considers using blockchain technology to secure records, ensure data integrity, and improve transparency.
 - i) Explain how blockchain can be applied in cyber security for this company.
 - ii) Discuss the benefits of using blockchain to protect data, prevent tampering, and enhance overall security.



Total No. of Questions :5]

SEAT No. :

PE5925

[Total No. of Pages : 2

[6553]-322

S.Y.M.B.A. (IT)

BDA610MJ:- BIG DATA ANALYTICS

(2024 Credit Pattern) (Semester -III)

Time : 2½ Hours]

[Max. Marks : 50

Instructions to the candidates:

- 1) *All questions are compulsory*
- 2) *Each Question having 10 marks.*
- 3) *Figures to the right indicate full marks for individual questions.*

Q1) Solve (Any five)

[5×2=10]

- a) List out types of Digital Data.
- b) Define Big Data.
- c) Name any two tools used for analyzing data with UNIX.
- d) Define Hadoop Streaming.
- e) Explain Apache Hadoop.
- f) Explain Infosphere BigInsights.
- g) Explain Hadoop Echo System.
- h) Write IBM Big Data Strategy.

Q2) Write short note (Any Two)

[2×5=10]

- a) Design of HDFS
- b) Data Flow
- c) Hadoop file system interfaces
- d) Data Ingest with Flume

Q3) Solve (Any One)

[10]

- a) Illustrate the Shuffle and Sort phase of MapReduce in detail. Explain how intermediate data is transferred from mappers to reducers.
- b) Illustrate the complete anatomy of a MapReduce job run with a neat diagram?

P.T.O.

Q4) Solve (Any One)

[10]

- a) Analyze the execution modes of Pig with suitable example.
- b) Compare the Hive Shell and Services with Traditional Databases with suitable example

Q5) Solve the Following (Any One)

[10]

- a) Define Machine Learning (ML) and explain various types of Machine Learnings with suitable example.
- b) Justify the role of BigR in Big Data Analytics and machine learning capabilities. supported by BigR.



Total No. of Questions : 5]

SEAT No. :

PE-12148

[Total No. of Pages : 2

[6553]-323

M.B.A. (IT)

**CSP610MJ : Cloud Security and Privacy
(2024 Pattern) (Semester - III)**

Time : 2½ Hours]

[Max. Marks : 50

Instructions to the candidates :

- 1) *All questions are compulsory.*
- 2) *Each question carries 10 marks.*
- 3) *Figures to the right indicate marks.*

Q1) Give the answers in short (Any five)

[5 × 2 = 10]

- a) Define data sovereignty with reference to cloud deployments.
- b) List the types of security threats in cloud environments.
- c) Give the names of cloud security best practices.
- d) Define the responsibilities of cloud providers.
- e) Which standard is used for regulatory compliance in healthcare organizations that migrate to cloud environments?
- f) Define penetration testing?
- g) List the names of encryption techniques in cloud computing.
- h) What are the security goals in the cloud?

Q2) Solve the following (Any two) :

[2 × 5 = 10]

- a) Explain the concept of privacy in cloud and the issues involved in handling the sensitive data.
- b) Discuss cloud infrastructure vulnerabilities and explain how they affect security.
- c) Explain Role-Based - Access Control (RBAC) with a cloud-based example.

P.T.O.

Q3) Solve the following :

[1 × 10 = 10]

- a) Differentiate between Role based Access control (RBAC) and Attribute Based Access Control (ABAC) models.

OR

- b) Explain the concept of privacy by design in cloud architecture.

Q4) Answer any one question :

[1 × 10 = 10]

- a) Explain the role of security audits and penetration testing in improving cloud security.
- b) What are the security best practices that organizations should follow during cloud adoption? Explain any two in detail.

Q5) Answer any one question :

[1 × 10 = 10]

- a) An organization noticed suspicious login activities from multiple geographic locations for the same cloud account. As a cloud security consultant, what authentication and access control techniques will you suggest to secure the cloud account?
- b) A healthcare organization stores patient data in cloud and shares it with doctors remotely. As a cloud security consultant, suggest suitable encryption techniques for data at rest and in transit to secure sensitive information.



Total No. of Questions : 5]

SEAT No. :

PE-5929

[Total No. of Pages : 2

[6553]-324
S.Y. M.B.A. (IT)
JSC-610-MJ : JavaScript
(2024 Pattern) (Semester - III)

Time : 2½ Hours]

[Max. Marks : 50

Instructions to the candidates :

- 1) *All questions are compulsory.*
- 2) *Figures to the right indicate full marks.*

Q1) Solve Any 5 :

[5 × 2 = 10]

- a) What is a closure? Give a simple explanation.
- b) Explain the purpose of the JSON.parse() method.
- c) Define variable hoisting in JavaScript. Give one example.
- d) What are JavaScript data types? Name any four.
- e) Define an arrow function. Give a syntax example.
- f) What are callbacks in JavaScript? Give one use-case.
- g) What is the difference between == and === operators in JavaScript?
- h) What is the difference between var, let and const?

P.T.O.

Q2) Solve Any Two :

[2 × 5 = 10]

- a) Explain JavaScript functions. Differentiate between regular functions and arrow functions with examples.
- b) Explain the concept of asynchronous JavaScript. Describe callbacks, promises, and async/await with examples.
- c) Explain constructor functions and classes in JavaScript.

Q3) Solve Any One :

[1 × 10 = 10]

- a) Describe the fetch() API in detail. Explain how it is used for making HTTP requests, promise handling, response processing, error handling, and real-time data retrieval.
- b) Explain client-side storage mechanisms in detail. Compare Local Storage, Session Storage, and Cookies with examples.

Q4) Solve Any One :

[1 × 10 = 10]

- a) Explain asynchronous JavaScript. Discuss callbacks, callback hell, promises, chaining, and async/await with suitable examples.
- b) Describe JavaScript objects thoroughly. Explain object creation methods, constructors, prototypes, classes, and inheritance with suitable examples.

Q5) Solve Any One :

[1 × 10 = 10]

- a) Discuss ES6 features in detail. Explain template literals, destructuring, spread/rest operators, block-scoped declarations (let, const) arrow functions, modules, and classes.
- b) Explain arrays in JavaScript in detail. Discuss array creation, indexing, iteration, and important methods such as map(), filter(), reduce(), push(), pop() with examples.



Total No. of Questions : 5]

SEAT No. :

PE5926

[Total No. of Pages : 2

[6553]-325

S.Y. M.B.A. (IT)

AML 611 MJ-311 : AI & MACHINE LEARNING

(2024 Credit Pattern) (Semester - III)

Time : 2½ Hours]

[Max. Marks : 50

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *All questions are equal marks.*

Q1) Attempt any five.

[5×2=10]

- a) Define Artificial Intelligence (AI). How does it differ from human intelligence.
- b) Define data cleaning. Mention one technique used for cleaning data.
- c) Define unsupervised learning. Give one example of an unsupervised algorithm.
- d) What is data preprocessing? Why is it important in ML?
- e) What is reinforcement learning? Mention one area where it is applied.
- f) State any two business areas where clustering can be applied.
- g) What is supervised learning? State one commonly used supervised learning algorithm.
- h) What is Machine Learning (ML)? Give one example of its use.

Q2) Solve any Two.

[2×5=10]

- a) Explain the key differences between AI and ML and how they are applied in business contexts.
- b) Explain supervised, unsupervised and reinforcement learning. Compare their key characteristics and discuss how each type supports different business decision-making scenarios.
- c) Differentiate between k-means and Hierarchical clustering.

P.T.O.

Q3) Solve any ONE.

[10]

- a) A Decision Tree model has max-depth = 2 and gives 82% accuracy. After tuning, max-depth = 5 gives 92% accuracy.
- Explain how hyper parameter tuning improved the model.
 - Explain how you would use cross-validation to confirm the model is not overfitting.
- b) What is Logistic Regression? Explain how it works in classification using the sigmoid function.

Q4) Solve any one.

[10]

- a) A classification model produced the following results:

TP=50	TN=40
FP=15	FN=25

- Calculate Accuracy, precision, Recall and F1-score
 - Explain what each metric tells about model performance.
- b) Analyse a classification model using accuracy, precision, recall and F1-score. Explain how each metric impacts model performance.

Q5) Answer any one

[10]

- a) A bank deploys an AI system to approve or reject loan applications. After six months, analysis shows applicants from certain regions are consistently denied loans despite having similar credit scores to others.
- Identify the possible sources of bias in this AI system.
 - Discuss the ethical risks associated with biased loan approvals.
 - Suggest measures to ensure algorithmic transparency and fairness in the system.
- b) Evaluate ethical issues in AI such as bias, transparency, and data privacy with real-world examples.



Total No. of Questions : 5]

SEAT No. :

PE5997

[Total No. of Pages : 2

[6553]-326

S.Y. M.B.A. (IT)

CCU 611 MJ : CLOUD COMPUTING USING AZURE

(2024 Credit Pattern) (Semester - III)

Time : 2½ Hours]

[Max. Marks : 50

Instructions to the candidates:

- 1) All questions are compulsory.*
- 2) Figures to the right indicate full marks.*
- 3) Draw neat and labelled diagrams wherever necessary.*

Q1) Solve any five (2 marks each) :

[10]

- a) State the meaning of Microsoft Azure.
- b) List the characteristics of public cloud.
- c) Identify the role of Azure Load Balancer.
- d) State the purpose of Express Route.
- e) Identify the use of Azure File Storage.
- f) Define data redundancy in Azure.
- g) State the function of Azure Policy.
- h) Identify the meaning of CI/CD.

Q2) Answer any two (5 marks each) :

[2×5=10]

- a) Summarize the Azure architecture and its core components.
- b) Illustrate the working of Azure VPN with use cases.
- c) Outline the benefits of Azure Content Delivery Network.

P.T.O.

Q3) Answer any one : **[10]**

- a) Demonstrate how virtual networking is configured in Azure.

OR

- b) Illustrate the application of different Azure Storage Services.

Q4) Answer any one : **[10]**

- a) Analyze identity and access management using Azure Active Directory.

OR

- b) Examine common cloud security threats and Azure-based controls.

Q5) Answer any one : **[10]**

- a) Evaluate scaling strategies for web applications on Azure App Services.

OR

- b) Construct a CI/CD pipeline using Azure DevOps tools.



Total No. of Questions :5]

SEAT No. :

PE5927

[Total No. of Pages : 2

[6553]-327

S.Y. M.B.A. (IT)

MAN 611MJ : MARKETING ANALYTICS

(2024 Credit Pattern) (Semester -III)

Time : 2½ Hours]

[Max. Marks : 50

Instructions to the candidates:

- 1) *All questions are compulsory*
- 2) *Each Questions having 10 marks.*
- 3) *Figures to the right indicate full marks.*

Q1) Short Answers Any 5.

[5×2=10]

- a) Define Big Data.
- b) What is RFM Analysis?
- c) Define Conversion Rate.
- d) What is Attribution Modeling?
- e) Define Data Mining.
- f) What is a Heatmap?
- g) Define Churn Prediction.
- h) What is Customer Persona?

Q2) Answer Any 2

[10]

- a) Explain A/B Testing with an example.
- b) What is Sentiment Analysis? Explain its applications.
- c) Discuss types of marketing data used in analytics.

Q3) Answer Any 1

[10]

- a) Explain Customer Lifetime Value (CLV) and its applications.
- b) Describe various forecasting methods used in marketing analytics.

P.T.O.

Q4) Answer Any 1

[10]

- a) Explain the role of AI and Machine Learning in marketing analytics.

OR

- b) Discuss challenges in implementing marketing analytics.

Q5) Answer Any 1

[10]

- a) Explain market segmentation and types of segmentation.

OR

- b) Discuss the role of Marketing Dashboards in decision-making.



Total No. of Questions : 5]

SEAT No. :

PE5928

[Total No. of Pages : 2

[6553]-328

S.Y. M.B.A. (IT)

SQA609 MJ : SOFTWARE QUALITY ASSURANCE

(2024 Credit Pattern) (Semester - III)

Time : 2½Hours]

[Max. Marks : 50

Instructions to the candidates:

- 1) All questions are compulsory.**
- 2) Each question are having 10 marks.**
- 3) Figures to the right indicate full marks.**

Q1) Give the answers in short (solve any 5 each having 2 marks) [5×2=10]

- a) Differentiate between Quality Assurance (QA) and Quality Control (QC).
- b) State two advantages of Automated Testing over Manual Testing in a typical Software project.
- c) What is the main purpose of defining the Test objectives in a Test plan.
- d) Identify two key statuses a defect goes through in the defect Life cycle.
- e) Explain how risk analysis helps in optimizing the test execution efforts.
- f) How does the Test coverage metric help in assessing software Quality?
- g) How is Boundary Value Analysis (BVA) used to design effective test cases?
- h) Explain manual and Automated testing.

Q2) Solve any two (5 marks each) [2×5=10]

- a) Quality control versus Quality Assurance
- b) Benefits and challenges of Automation.
- c) Explain Risk Mitigation strategies.

P.T.O.

Q3) Solve any one of the following. **[10]**

- a) Explain agile methodology in detail along with its advantages.
- b) Explain test case design along with its types.

Q4) Solve any one of the following. **[10]**

- a) Discuss various Risk mitigation strategies in Agile Software Development.
- b) What is the Test plan? Explain its scope, objectives and strategy in detail.

Q5) Write a descriptive note on (any two) **[2×5=10]**

- a) Risk identification Techniques.
- b) Quality metrics (any two).
- c) Test coverage and Traceability Matrix.

