

Code No: 116FA

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B.Tech III Year II Semester Examinations, May - 2016

INTRODUCTION TO ANALYTICS

(Common to CSE, IT)

Time: 3 hours

Max. Marks: 75

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART - A

(25 Marks)

- 1.a) List the Data types in R. [2]
- b) Explain R loops. [3]
- c) Define Expected value? [2]
- d) What are the roles of a Team member? [3]
- e) Define NO SQL? [2]
- f) Write the differences of NO SQL and SQL. [3]
- g) Explain Regression residuals. [2]
- h) Define Multiple Linear Regression? [3]
- i) What is meant my Manufacturing? [2]
- j) Explain Smart Utilities. [3]

PART - B

(50 Marks)

- 2.a) What are Outliers? Explain with an example?
- b) Explain about Work Management and Prioritization. [5+5]

OR

3. Explain the following with syntax and example.
 - a) Numeric
 - b) Character
 - c) Date
 - d) Array
 - e) Matrix. [15]

- 4.a) Explain about Random and Bivariate Random variables.
- b) What is Professionalism? How to exhibit Professionalism? [5+5]

OR

5. Explain about Central Limit Theorem in detail with example in R. [10]

- 6.a) What are the benefits of NO SQL?
b) List the NO SQL database examples. [5+5]

OR

- 7.a) Write the NO SQL database classification based on data model with examples.
b) List the steps for connecting R to NO SQL database. [5+5]

8. Explain the following:
a) Correlation
b) Auto correlation. [5+5]

OR

9. What is Heteroscedasticity? Explain in detail. [10]

10. Explain about Requirements Gathering related to a business. [10]

OR

11. Explain the concept of Understanding systems and Engineering Design. [10]

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Code No: 116FB

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B.Tech III Year II Semester Examinations, May - 2016

INFORMATION SECURITY MANAGEMENT

(Common to CSE, IT)

Time: 3 hours

Max. Marks: 75

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART - A

(25 Marks)

- 1.a) Define information security. [2]
- b) What is an attack? Write its types. [3]
- c) What are the key elements of networks? [2]
- d) What is information state? [3]
- e) What is KPI? [2]
- f) How data loss occurs? [3]
- g) What is security frame work? [2]
- h) Describe the configuration of information security policy. [3]
- i) What are risk control strategies? [2]
- j) Give an overview of risk management. [3]

PART - B

(50 Marks)

2. Explain in detail about to manage the work to meet requirements. [10]
OR
3. Discuss in detail about common vulnerabilities and exposures. [10]
4. How to work effectively with colleagues? Explain. [10]
OR
5. What are critical information characteristics? Explain. [10]
6. What are data leakage threats? Explain. [10]
OR
7. Explain in detail about database security. [10]
8. Discuss about security standards in detail. [10]
OR
9. Explain about characteristics of information security policies. [10]
10. Discuss about security roles and responsibilities. [10]
OR
11. Explain about risk analysis process. [10]

Code No: 126AP

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B.Tech III Year II Semester Examinations, May - 2016

DISTRIBUTED SYSTEMS

(Computer Science and Engineering)

Time: 3 hours

Max. Marks: 75

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART - A

(25 Marks)

- 1.a) List the services provided by multiple servers, proxy server and peer processes. [2]
- b) Define types of failures. What is meant by byzantine failure? [3]
- c) Define bully algorithm. [2]
- d) Define the definition of the critical section. [3]
- e) List the differences between TCP and UDP. [2]
- f) State client-server communication. [3]
- g) Explain name resolution. [2]
- h) Explain other aspects in the Andrew file system. [3]
- i) Explain recovery of nested transactions. [2]
- j) Define distributed deadlock? [3]

PART - B

(50 Marks)

- 2.a) Describe the advantages and disadvantages of the HTML, URL and HTTP as core technologies for information browsing.
- b) Discuss how distributed systems are more scalable than the centralized systems. [5+5]

OR

- 3.a) Demonstrate the design requirements for distributed architectures.
- b) Explain how events are ordering in real-time with neat sketch. [5+5]

- 4.a) Explain different kinds of problems that are associated with the coordination and agreement in distributed systems.
- b) Explain how election is done when any particular system crashes? [5+5]

OR

- 5.a) Differentiate failure assumptions and failure detectors.
- b) Illustrate an example execution of the ring- based algorithm to show that processes are not necessarily granted entry to the critical section in happened-before order. [5+5]

- 6.a) Explain RPC with a neat example.
b) Discuss about the communication between distributed objects in RMI. [5+5]

OR

- 7.a) Explain the implementation of the RMI and distributed garbage collection.
b) Define the interface to the election service in the CORBA IDL, and JAVA RMI. Note that CORBA IDL provides type long for 32-bit integers. Compare the methods in the two languages for specifying input and output arguments. [5+5]

- 8.a) Explain sequential consistency and IVY in detail.
b) Discuss in detail about Munin. [5+5]

OR

- 9.a) Explain directory and discovery services.
b) Explain release consistency with an example. [5+5]

- 10.a) Define deadlock? And explain how deadlocks are occurred and recovered in the distributed systems?
b) Explain with an example how two transactions are interleaved which are serially equivalent at each server but is not serially equivalent globally? [5+5]

OR

- 11.a) Distinguish all the locking protocols in distributed transactions.
b) Discuss the edge-chasing algorithm. Give examples to show that it could detect phantom deadlocks. [5+5]

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Code No: 126EJ

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B.Tech III Year II Semester Examinations, May - 2016

MANAGERIAL ECONOMICS AND FINANCIAL ANALYSIS

(Common to ECE, CSE, MMT)

Time: 3 hours

Max. Marks: 75

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART - A**(25 Marks)**

- 1.a) What is a normative statement? [2]
- b) Differentiate complementary goods from the substitutes. [3]
- c) What are implicit costs? Give suitable examples. [2]
- d) How do average fixed cost per unit and average variable cost per unit vary with output level? [3]
- e) What is the minimum and maximum number of partners in a non banking partnership firm? [2]
- f) What is the basic difference between monopolistic condition and duopoly? [3]
- g) Define profitability index. [2]
- h) What items constitute current assets? Give suitable examples. [3]
- i) Define ROI. [2]
- j) Define any of the two activity ratios and illustrate with assumed data. [3]

PART - B**(50 Marks)**

- 2.a) What are the disadvantages of statistical techniques of demand forecasting?
- b) What are the determinants of demand? [5+5]

OR

- 3.a) A consumer was viewing movie in multiplex 8 times in a year with his family when his annual income was Rs.5,00,000. When the income was raised to Rs.8, 00,000 on his promotion, the frequency of entertainment of his family on movies per year became 12 times. Calculate the income elasticity of demand of entertainment.
- b) How does knowledge of managerial economics enable one to take better business decisions? [5+5]

- 4.a) How does marginal cost differ from average cost?
- b) A company is selling a product at Rs.20 of which variable cost is Rs.2. The fixed overheads of the company amount to Rs.1,80,000. What is the break- even point? What is the turnover required to earn a profit of Rs.36, 000? [5+5]

OR

- 5.a) With the usual notation write the equation for Cobb-Douglas production function.
- b) What are the internal economies of production? Explain each of them briefly. [3+7]

- 6.a) What are the forms of privatization?
- b) Which are the two cost-based pricing methods? What are their limitations? [5+5]

OR

- 7.a) Compare perfect completion with monopoly.
- b) What is partnership deed and mention its components? [6+4]

- 8.a) What factors influence the volume of working capital needed by an organization?
b) Explain the concept of working capital cycle. [5+5]

OR

9. A corporation has to decide as to which of the following two machines need to be bought. The outlay for each of the projects is /Rs.2, 00,000.

| Year | Cash flow for project A Rs. | Depreciation for project A Rs. | Cash flow for project B Rs. | Depreciation for project B Rs. |
|------|-----------------------------|--------------------------------|-----------------------------|--------------------------------|
| 1 | 1,00,000 | 20,000 | 50,000 | 40,000 |
| 2 | 50,000 | 20,000 | 60,000 | 40,000 |
| 3 | 60,000 | 20,000 | 50,000 | 40,000 |
| 4 | 20,000 | 20,000 | 50,000 | 40,000 |
| 5 | | | 50,000 | 40,000 |

Calculate the payback period for each of the projects and rank them. [10]

- 10.a) A firm maintains a provision for bad debts at 5% and a provision for discount at 2% on total debtors. From the following particulars, write up the provision and reserve account.

Balances on 1st April 2014.

Provision for bad debts Rs.45,000.

Provision for discount on debtors Rs.40, 000.

Total debtors were on 31st March 2015 Rs. 10, 00,000 after writing off bad debts of Rs.25,000 and allowing discount of Rs.30, 000.

On 31st March 2016 Rs.6, 00,000 after writing off bad debts of Rs.15, 000 and allowing discount of Rs.17,500.

- b) What are the limitations of ratio analysis? [5+5]

OR

- 11.a) A company's sales for the year was Rs.12,00,000/-, 60% of which were on credit basis. At the beginning of the year the opening Sundry debtors showed Rs. 80,000 and the closing balance was Rs. 40,000. Calculate debtor turnover ratio.

- b) Define 'Double entry principle' and elaborate the Accounting records to be maintained by an organization. [6+4]

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Code No: 126EQ

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year II Semester Examinations, May - 2016

OBJECT ORIENTED ANALYSIS AND DESIGN

(Common to CSE, IT)

Time: 3 hours

Max. Marks: 75

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART - A

(25 Marks)

- 1.a) What is an artifact? [2]
- b) What are the adornments in the UML? [3]
- c) What is navigation? [2]
- d) Explain the levels of visibility. [3]
- e) What is use case diagram? [2]
- f) What are interaction diagrams? [3]
- g) What is a component? [2]
- h) What is a deployment diagram? [3]
- i) What are the common uses of deployment diagrams? [2]
- j) What are the three kinds of components? [3]

PART - B

(50 Marks)

- 2.a) What are behavioral things? Explain.
 - b) What is UML? Where can the UML to be used? [5+5]
- OR**
- 3.a) What are the principles of modeling? Explain.
 - b) Draw the architecture of a software-intensive system and explain. [5+5]
- 4.a) What are the various kinds of Classifiers? Explain.
 - b) How to model the seams in a system? [5+5]
- OR**
- 5.a) Explain about generalization with an example.
 - b) Describe interfaces, types and roles with examples. [5+5]
- 6.a) Explain about use cases and actors and use cases and flow of events.
 - b) How to model a flow of control? [5+5]
- OR**
- 7.a) Explain sequence diagram with suitable example.
 - b) How to model the requirements of a system? [5+5]

- 8.a) Explain the following:
i) History states
ii) Time and space
b) How to model an API? [5+5]

OR

- 9.a) How to model an embedded system?
b) Differentiate the following:
i) Components and classes
ii) Nodes and components. [4+6]

10. Explain the following:
a) Patterns and architecture
b) Modeling an executable release. [5+5]

OR

11. Draw the following diagrams for the unified library application:
a) Class diagrams
b) Interaction diagrams. [5+5]

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Code No: 126ER

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**B.Tech III Year II Semester Examinations, May - 2016****SOFTWARE TESTING METHODOLOGIES****(Common to CSE, IT)****Time: 3 hours****Max. Marks: 75****Note:** This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART - A**(25 Marks)**

- | | | |
|------|------------------------------------------|-----|
| 1.a) | Define testing and debugging. | [2] |
| b) | What are the elements of flow graph? | [3] |
| c) | What is Data-flow testing? | [2] |
| d) | Give an example of a transaction-flow. | [3] |
| e) | What is domain testing? | [2] |
| f) | Define linear vector space. | [3] |
| g) | What are distributive laws? | [2] |
| h) | Give examples of four variable KV-chart. | [3] |
| i) | Define state-transition table. | [2] |
| j) | What is partial ordering relation? | [3] |

PART - B**(50 Marks)**

- | | | |
|-----------|----------------------------------------------------------------------|-------|
| 2.a) | Distinguish the following: | |
| | i) Function vs structure | |
| | ii) The builder vs Buyer | |
| b) | How should you go about quantifying the nightmare? Explain. | [5+5] |
| OR | | |
| 3.a) | Is complete testing possible? Explain. | |
| b) | What are the three kinds of loops? Explain with example. | [5+5] |
| 4.a) | Describe the complications of transaction flows. | |
| b) | What are data-flow anomalies? Explain. | [5+5] |
| OR | | |
| 5.a) | Define transaction flow testing. Explain transaction flow structure. | |
| b) | Explain about the data-flow model with example. | [5+5] |
| 6.a) | What are the restrictions of domain testing? Explain. | |
| b) | How to test two-dimensional domains? Explain. | [5+5] |
| OR | | |
| 7.a) | What is the strategy of domain testing? Explain in brief. | |
| b) | Discuss about domains and testability. | [5+5] |

- 8.a) Explain about the mean processing time of a routine with example.
b) Justify the following statement:
“Decision tables can also be used to examine a program’s structure”. [5+5]

OR

- 9.a) Explain Push/Pop arithmetic with example.
b) What are the rules of Boolean algebra? Explain. [5+5]

10. Explain the following:
a) Impact of bugs in state testing
b) Number of states in a state graph.
c) Properties of relations. [3+4+3]

OR

11. Explain the following:
a) Software implementation of state graphs.
b) Applications of graph matrices. [5+5]

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Code No: 126EP

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B.Tech III Year II Semester Examinations, May - 2016

WEB TECHNOLOGIES

(Common to CSE, IT)

Time: 3 hours

Max. Marks: 75

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART - A (25 Marks)

- 1.a) Give any two advantages of PHP. [2]
- b) How can you create array in PHP? Explain. [3]
- c) Discuss the common tags of XHTML. [2]
- d) How can you declare attributes in XML? Give an example. [3]
- e) What does Servlet config interface do? [2]
- f) When a Servlet accepts a call from a client, it receives two objects. What are they? [3]
- g) What is Session tracking? Explain. [2]
- h) What is the purpose of using Cookies? How they are created? [3]
- i) What is the difference between GET and POST method in Java Script? [2]
- j) How does one access cookie in a java script? [3]

PART - B (50 Marks)

- 2.a) Discuss about various functions used in PHP with examples.
 - b) Write a PHP script to add and remove users from a MySQL table. [5+5]
- OR**
- 3.a) Describe about various types of PHP interpreters.
 - b) Write a PHP script for searching a website URL for a keyword or sentence. [5+5]
- 4.a) Explain document structure description with example code in XML.
 - b) What are the XML namespaces and how are they declared? [5+5]
- OR**
- 5.a) Explain about various types of XML parsers.
 - b) How are XHTML elements and attributes represented in the java script binding to DOM? Explain. [5+5]
- 6.a) Write note on Common Gateway Interface (CGI).
 - b) What potential advantages do servlets have over CGI programs? Explain. [5+5]
- OR**
- 7.a) Describe the life cycle of a java servlet and write a simple servlet that reads three parameters from the form data.
 - b) Explain the differences between Generic Servlet and HttpServlet. [5+5]

- 8.a) Discuss about the features of JSP pages.
b) Write in brief about JSP tag extensions and libraries. [5+5]

OR

- 9.a) How does a Servlet communicates with a JSP page? Explain.
b) What is Bean? Discuss how to create beans in JSP. [5+5]

- 10.a) Explain various operators and data types available in java script.
b) Explain Document Object Model with suitable examples and code. [5+5]

OR

- 11.a) Explain about object, methods and events in Java Scripts.
b) Write short notes on simple Ajax application. [5+5]

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Code No: 126AQ

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year II Semester Examinations, May - 2016

INFORMATION SECURITY
(Computer Science and Engineering)

Time: 3hours

Max.Marks:75

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART- A**(25 Marks)**

- 1.a) What are the types of security attacks? [2]
- b) Compare substitution ciphers with transposition ciphers. [3]
- c) Compare block ciphers with stream ciphers. [2]
- d) Write about strength of DES algorithm. [3]
- e) What is a digital signature? [2]
- f) What properties must a hash function have to be useful for message authentication? [3]
- g) What are the various PGP services? [2]
- h) What parameters identify an SA and what parameters characterize the nature of a particular SA? [3]
- i) What is cross site scripting vulnerability? [2]
- j) What are the limitations of firewalls? [3]

PART-B**(50 Marks)**

- 2.a) Consider the following.
Plaintext: "PROTOCOL"
Secret key: "NETWORK"
What is the corresponding cipher text using play fair cipher method?
b) What is the need for security? [5+5]
- OR**
- 3.a) Explain the model of network security.
b) Write about steganography. [5+5]
4. Explain the AES algorithm. [10]
- OR**
5. Consider a Diffie-Hellman scheme with a common prime $q=11$, and a primitive root $\alpha=2$.
a) If user 'A' has public key $Y_A=9$, what is A's private key X_A .
b) If user 'B' has public key $Y_B=3$, what is shared secret key K. [5+5]
6. Explain HMAC algorithm. [10]
- OR**
- 7.a) Explain the DSA algorithm.
b) What is bio-metric authentication? [5+5]

- 8.a) Explain PGP trust model.
b) What are the key components of internet mail architecture? [5+5]
- OR**
- 9.a) Explain MIME context types.
b) What are the five principal services provided by PGP? [5+5]
10. Explain secure electronic transaction. [10]
- OR**
- 11.a) Explain password management.
b) What are the types of firewalls? [5+5]

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