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R-17

Code: 7P2B43

M.C.A. IV Semester Regular Examinations April/May 2019

Unix & Network Programming

Max. Marks: 60

Time: 3 Hours

Answer all five units by choosing one question from each unit (5 x 12 = 60 Marks)

UNIT-I

1. Explain Unix architecture with neat diagram 12M

OR

2. a) Explain POSIX standards 6M

b) Explain how to handle ordinary files in UNIX file system. 6M

UNIT-II

3. Explain various control structures in shell programming 12M

OR

4. Explain Unix functions for positioning standard I/O stream 12M

UNIT-III

5. a) Explain gettrlimit and settrlimit functions 6M

b) Explain terminal login and network login functions 6M

OR

6. a) Explain fork, vfork, exit and wait unix functions 8M

b) Explain various process identifiers 4M

UNIT-IV

7. a) Explain various types of signals 6M

b) Explain sigsetjmp and siglongjmp functions 6M

OR

8. a) Explain role of kernel for supporting various signals 6M

b) Explain about signal function. 6M

UNIT-V

9. Discuss about Interprocess Communication 12M

OR

10 a) Explain semaphore functions in Unix 8M

b) Explain mutex variable 4M

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R-17

Code: 7P2B4A

M.C.A. IV Semester Regular Examinations April/May 2019

Cloud Computing

Max. Marks: 60

Time: 3 Hours

Answer all five units by choosing one question from each unit (5 x 12 = 60 Marks)

UNIT-I

1. Explain the feature perspective and development of cloud computing. 12M

OR

2. With the help of a neat sketch explain cloud computing architecture and explain about a) Public b) Private clouds 12M

UNIT-II

3. a) Explain the collaboration of cloud computing for communities 6M

b) Explain about cloud computing for corporation and mapping scheduling. 6M

OR

4. Briefly explain the working and collaboration of cloud computing for centralizing email communications with examples. 12M

UNIT-III

5. Discuss the following terms:

a. Collaborating on spreadsheets & data bases 6M

b. Collaborating on contact management 6M

OR

6. a) Explain about exploring on line scheduling. 6M

b) Discuss about collaborating on event management. 6M

UNIT-IV

7. Explain the following terms:

a. Evaluating instant messaging 6M

b. Evaluating web conference tools 6M

OR

8. Explain how creation of groups is done on social networks. 12M

UNIT-V

9. Discuss about exploring online photo editing applications and evaluating the online file storage. 12M

OR

10. Explain how cloud computing is used in controlling web based desktops. 12M

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R-17

Code: 7P2B42

M.C.A. IV Semester Regular Examinations April/May 2019

Data Communication & Computer Networks

Max. Marks: 60

Time: 3 Hours

Answer all five units by choosing one question from each unit (5 x 12 = 60 Marks)

UNIT-I

- 1. a) Explain different Layers and their functionalities in TCP/IP network model? 6M
- b) Discuss in detail about the LAN and WAN? 6M

OR

- 2. a) What is meant by Multiplexing? Describe different types of multiplexing? 6M
- b) Compare and contrast a Circuit Switched Network and a Packet Switched Network? 6M

UNIT-II

- 3. a) Describe the significance of error detection and error correction mechanisms in data link layer? 6M
- b) Explain Sliding window protocol with suitable example? 6M

OR

- 4. a) Explain the functioning of wireless LAN or IEEE 802.11 in detail? 6M
- b) Explain the working of Carrier Sense Multiple Access protocol? 6M

UNIT-III

- 5. With a suitable example, explain Distance Vector Routing algorithm. What is the serious drawback of Distance Vector Routing algorithm? Explain? 12M

OR

- 6. a) Describe and discuss the Network layer design issues? 6M
- b) Explain about IPv6? Compare IPv4 and IPv6? 6M

UNIT-IV

- 7. List the features of TCP? Draw TCP segment format and explain its fields? 12M

OR

- 8. a) Discuss in detail about UDP services and applications? 6M
- b) Draw neat architecture of an Electronic Mail system and explain its message format? 6M

UNIT-V

- 9. a) Differentiate between Symmetric and Asymmetric key cryptography? 6M
- b) Describe the concept of Digital Signatures? 6M

OR

- 10. Give the structure of AES. Explain how encryption and decryption is done in AES? 12M

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R-17

Code: 7P2B44

M.C.A. IV Semester Regular Examinations April/May 2019

Data Mining

Max. Marks: 60

Time: 3 Hours

Answer *all five* units by choosing one question from each unit (5 x 12 = 60 Marks)

UNIT-I

1. a) What is Data Mining? Briefly outline the measures used to find the similarity and dissimilarity of data. 6M
- b) Sketch and explain the significance of Knowledge Discovery in Database (KDD) process in Data Mining. 6M

OR

2. List out data mining functionalities. Give examples of each data mining functionalities, using a real-life database with which you are familiar. 12M

UNIT-II

3. What is the purpose of classification? How classification is performed using decision tree induction by considering student training data set for “buys computer”. 12M

OR

4. Write Bayes Theorem. Use Bayesian classification method on weather data set for an optimal decision making. 12M

UNIT-III

5. Analyze the steps in finding frequent itemsets using an Apriori algorithm. 12M

OR

6. Apply an FP growth algorithm and generate frequent itemsets from FP-tree with a suitable example. 12M

UNIT-IV

7. Differentiate between Agglomerative and K-Means clustering methods. 12M

OR

8. Define clustering? Describe how DBSCAN Clustering algorithm is used to cluster the data. 12M

UNIT-V

9. Write short notes on i) Proximity based outlier detection ii) Density based outlier detection 12M

OR

10. Mention the reasons for anomalies/outliers. List out various statistical approaches in detecting anomalies. 12M

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R-17

Code: 7P2B41

M.C.A. IV Semester Regular Examinations April/May 2019

Software Engineering

Max. Marks: 60

Time: 3 Hours

Answer all five units by choosing one question from each unit (5 x 12 = 60 Marks)

UNIT-I

1. a) What are the advantages of iterative development? Compare iterative development with Incremental delivery approach 6M
- b) Explain the concept of legacy systems. 6M

OR

2. Explain the incremental process model with advantages and disadvantages. 12M

UNIT-II

3. a) Why the understanding requirements from stake holders are difficult task? Explain in detail. 6M
- b) Explain the need of requirement prioritization? How the requirements are prioritized? 6M

OR

4. Define software. List and explain about the elements of a software process. 12M

UNIT-III

5. a) What are coupling and cohesion? High cohesion and low coupling is required for efficient software. Why? 6M
- b) Write advantages of object oriented design. Explain how can we identify objects classes. 6M

OR

6. a) How do we perform design evaluation? Explain it with suitable example 6M
- b) Explain modularity, Refinement and Re - factoring in Software design process. 6M

UNIT-IV

7. Explain in detail function point metric. List all the value adjustment factors. What are the metric for specification quality? 12M

OR

8. a) Describe various functional and unit testing techniques in detail 6M
- b) What is the use of code verification? How code verification is carried out? 6M

UNIT-V

9. a) What is Risk Management? Explain RMMM plan. 6M
- b) List the areas covered by ISO 9001 model for quality assurance 6M

OR

10. a) Define maintenance. Describe various methods of estimating maintenance cost. 6M
- b) Explain PCMM with neat diagram 6M

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R-17

Code: 7P2B4F

M.C.A. IV Semester Regular Examinations April/May 2019

System Software

Max. Marks: 60

Time: 3 Hours

Answer all five units by choosing one question from each unit (5 x 12 = 60 Marks)

UNIT-I

1. a) Explain the different registers and instruction formats of SIC machine architecture. 6M
b) Apply the knowledge of machine architecture and compare SIC and SIC/XE machine architecture. 6M

OR

2. a) Explain the components of a system programming in detail. 6M
b) Differentiate between Machine language and Assembly language. 6M

UNIT-II

3. Define an Assembler? List the attributes to be considered while designing an Assembler. 12M

OR

4. Analyze and design the one pass assembler and discuss the data structures used for the same. 12M

UNIT-III

5. What is the need of macros in programming? Applying that knowledge, develop single and multi-pass macro processor. 12M

OR

6. Explain the functionalities and types of macro processor. 12M

UNIT-IV

7. Apply the knowledge of loaders and develop relocatable loader within an assembly language. 12M

OR

8. Describe the functionalities of dynamic linkers with an example. 12M

UNIT-V

9. Define Compiler? Show the different phases of compiler for the given source code:
a[*len*] = b + c * len 12M

OR

10. a) What are applications of Finite State Machine (FSM)? 6M
b) Construct the parse tree for the following given grammars
1. **S → iEtS | iEtSeS | a , E → b**, input string is : **ibtibtaea**
2. **S → S(S)S | ε**, input string: **()()** 6M
