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Total No. of Questions : 18

MCA (2015 to 2018) (Sem.-4)

M.Code : 74121

Max. Marks : 60

1. SECTIONS-A, B, C & D contains TWO questions each carrying TEN marks each and students has to attempt any ONE question from each SECTION.
2. SECTION-E is COMPULSORY consisting of TEN questions carrying TWENTY marks in all.

1. Elaborate in detail the different graphics devices.
2. a) What are the various color display techniques used in computer graphics? Briefly discuss each.
b) Differentiate between raster scan and random scan systems.

3. Differentiate the steps required to scan-convert a circle using the mid-point and Bresenham's algorithm.
4. What do you mean by line clipping? Discuss Cohen-Sutherland line-clipping algorithm for 2-D objects.

5. What are 3-dimensional geometric transformations? Explain the basic 3-D transformations along with their matrix representation.
6. Explain in detail the properties of Bezier and B-spline curves.

SECTION-D

7. Discuss in detail the Z-buffer algorithm. How does this algorithm determine which surfaces are hidden?
8. Discuss the working of Phong shading algorithm with an example.

SECTION-E

9. Define computer graphics. Write any two applications.
10. What are display controllers?
11. What are the side effects of Bresenham's line drawing technique?
12. What do you mean by Composite transformation?
13. Why are homogeneous coordinate systems required in computer graphics?
14. What is the difference between polygon clipping and text clipping?
15. Write the matrix representation of Shearing.
16. Define Antialiasing.
17. Differentiate between illumination and shading.
18. What is the major difference between A-buffer and Z-buffer methods for visible surface detection?



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Total No. of Questions : 09

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTIONS-A, B, C & D contains TWO questions each carrying TEN marks each and students has to attempt any ONE question from each SECTION.
2. SECTION-E is COMPULSORY consisting of TEN questions carrying TWENTY marks in all.

SECTION-A

1. What is a Mobile application? What are its characteristics? Discuss the architecture and working of iOS operating system.
2. Discuss the various enterprise requirements that are addressed in a mobile application.

SECTION-B

3. What is Android? Discuss its features and advantages. Elaborate in detail the Android development environment.
4. What do you understand by Mobile Software Engineering? Explain in detail the various phases in mobile software engineering.

SECTION-C

5. Discuss the core components of an Android app and how they are put together to create a full-featured app.
6.
 - a) What is meant by multiplatform designs? How is it incorporated?
 - b) What is the role of animation and graphics in mobile apps?

SECTION-D

7. Give an overview of iOS development environment. Explain in detail the different iOS layers.
8. Discuss the Windows phone environment and its platform.

SECTION-E

9. Answer the following in brief :

- a) List any four features of Android Studio.
- b) What is Dalvik Virtual Machine?
- c) Give overview of Swift.
- d) What is Android XML?
- e) Write steps for testing methodologies for mobile applications.
- f) List the software required for mobile application development.
- g) Why is mobile development difficult?
- h) What is An Activity?
- i) What are the Sensors used in a mobile App?
- j) What is AVD Manager?



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Total No. of Questions : 18

MCA (2015 to 2018) (Sem.-4)
ADVANCED OPERATING SYSTEMS
 Subject Code : MCA-404
 M.Code : 74122

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTIONS-A, B, C & D contains TWO questions each carrying TEN marks each and students has to attempt any ONE question from each SECTION.
2. SECTION-E is COMPULSORY consisting of TEN questions carrying TWENTY marks in all.

SECTION-A

1. Give a detailed description of Multi-processor and Distributed Operating System Architecture. Explain various design and development issues in Multi-Processor and Distributed systems.
2. How is Inter-Process Communication achieved in Distributed Operating systems? Give suitable examples along with your answer.

SECTION-B

3. Describe structure of Real Time and Embedded (RE) operating systems clearly specifying differences between Nano-kernel, Micro-kernel and Monolithic-kernel based models.
4. What do you mean by Energy Aware CPU Scheduling concept? How is it different from traditional CPU scheduling?

SECTION-C

- What are the main features of Grid Computing architecture? What are its applications? How is it better than other operating system architectures?
- How is the Performance analysis done in Grid Computing environment? Also describe the Grid Monitoring and Scheduling processes.

SECTION-D

7. Compare and contrast the various Mobile Operating systems on the basis of their features and platforms.
8. What is cloud computing? What are its building blocks? Describe four types of application that are especially well- suited for mobile computing and cloud computing.

SECTION-E

Write short notes on :

9. Mobile Operating Systems
10. Nano-kernel model
11. Hardware & Software Virtualization in Cloud
12. Load Balancing
13. Features of Android OS
14. Cloud Building Blocks
15. Scheduling in Real time and Embedded OS
16. Cluster Computing
17. Distributed File System
18. Inter-Process Communication



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Total No. of Pages : 02

Total No. of Questions : 18

MCA (2015 to 2018) (Sem.-4)
E-COMMERCE & WEB APPLICATION DEVELOPMENT
Subject Code : MCA-402
M.Code : 74120

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTIONS-A, B, C & D contains TWO questions each carrying TEN marks each and students has to attempt any ONE question from each SECTION.
2. SECTION-E is COMPULSORY consisting of TEN questions carrying TWENTY marks in all.

SECTION-A

1. What is E-commerce? How does it differ from Traditional Commerce? What are the potentials benefits of E-commerce? Discuss in detail.
2. What is EDI? Discuss different types and benefits of EDI.

SECTION-B

3. What is Web based Marketing and communications? From the consumer's perspective, what makes online shopping attractive? Discuss with examples. Also mention drawbacks, if any.
4. What are various layers in TCP/IP Protocol suite? Brief out functions performed by each layer.

SECTION-C

5. a) How do you use <form> tag in an HTML page for data collection? Illustrate with relevant example.
 b) What are Frames in HTML? What are its uses?
6. How do Cascading Style Sheets ensure consistent design of a web site? Explain with examples from CSS3.



SECTION-D

7. a) Write a Java Script to display the odd numbers between 1 and 100.
b) Write a Java Script to prompt a message if the number entered in a text box exceeds 100.
8. How can you handle mouse related events in Java scripts? Discuss with suitable example.

SECTION-E

9. What are Smart Cards?
10. List two major legal issues in E-Commerce.
11. Define URL and IP address.
12. What is the role of online catalogs?
13. What do you mean by Firewall?
14. What are the strategies for website optimization?
15. How do you insert image as hyperlink in a web page?
16. What is IP spoofing?
17. Define DOM.
18. What is a layer in context of web page?



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