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12-00-3-01R

MASTER OF COMPUTER APPLICATIONS DEGREE EXAMINATION, MARCH - 2024

THIRD SEMESTER

PAPER - MCA 301 : SOFTWARE ENGINEERING

(Under C.B.C.S. New Regulations w.e.f. 2020-2021)

(Common Paper to University and all Affiliated colleges)

Time : 3 Hours **Max. Marks :70**

PART - A

(Compulsory)

Answer any FIVE of the following questions. Each question carries 4 marks.(5×4=20)

1. a) List and explain different software myths and its consequences.
   b) Describe the construction practices of software development.
   c) What is System Engineering? Explain.
   d) Differentiate between requirements elicitation and analysis.
   e) What is design process? Explain.
   f) What are the issues involved in architecture design?
   g) What is Validation Testing? Explain.
   h) Explain equivalence testing technique.
   i) Describe the software quality framework.
   j) What is Reengineering and Reverse Engineering?

PART - B

Answer FIVE questions, choosing ONE question from each Unit. Each question carries 10 marks **(5×10=50)**

UNIT - I

2. What is component based development? Explain about formal methods model of software process?

(OR)

3. Define software engineering and explain its technical and managerial activities in detail.

UNIT - II

4. List and explain different requirement analysis modeling approaches with examples.

(OR)

5. Distinguish between data modelling and behavioural modelling techniques.

UNIT - III

6. Explain about component based software engineering and pattern based software design.

(OR)

7. List different software architectures and explain any four of them with neat sketches.

UNIT - IV

8. What are the various strategies used for testing object oriented software? Discuss.

(OR)

9. Explain basis path testing technique with suitable example.

UNIT - V

10. What is the significance of decomposition in software estimation? List and explain different Decomposition techniques.

(OR)

11. Write a detailed note on Software Project Scheduling and risk management techniques.

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MASTER OF COMPUTER APPLICATIONS DEGREE EXAMINATION, MARCH - 2024

THIRD SEMESTER

PAPER : MCA 302 : COMPUTER GRAPHICS

(Under C.B.C.S. New Regulations w.e.f. 2020-2021)

(Common Paper to University and all Affiliated colleges)

Time : 3 Hours **Max. Marks :70**

PART - A

(Compulsory)

Answer any FIVE of the following questions. Each question carries 4 marks.(5×4=20)

1. a) Define the terms pixel, aspect ratio, resolution and frame buffer.

   b) Write about character generation and bundled attributes.

   c) Draw line from (0,0) to (6,7) using simple DDA algorithm, rasterize this line.

   d) Derive transformation matrix, when point P(x, y) is reflected about line y = mx + c.

   e) Write about curve and text clipping with example.

   f) Explain window to view port transformation

   g) What is shear transformation? Explain X-shear and Y-shear with example.

   h) Write short notes raster animations.

   i) Briefly explain about spline representation.

   j) Write about different types of parallel projection.

PART - B

Answer FIVE questions, choosing ONE question from each Unit. Each question carries 10 marks. **(5×10=50)**

UNIT - I

2. a) Explain about working of CRT monitors with neat diagram.

   b) Explain beam-penetration and shadow mask technique.

(OR)

3. Illustrate midpoint circle drawing algorithm with example. Assume 10 cm as theradius and co-ordinate as the center of the circle.

UNIT - II

4. a) Perform the 45^0 rotation of triangle A(0, 0), B (1, 1), C (5, 2) about point P(-1,-1)

   b) Prove that two successive 2-D rotation are additive i.e., $R(\theta 1) . R(\theta 2)=R(\theta 1+ \theta 2)$.

(OR)

5. Explain about scan line polygon fill algorithm.

UNIT - III

6. Illustrate Cyrus - beck line clipping algorithm with suitable example.

(OR)

7. Consider a rectangle with left bottom corner at (0,0) and right top corner at (8,4). Clip the line P_1P_2 with vertices $P_1(-1,1)$ and $P_2(9,3)$ against the given rectangle using Cohen Sunderland clipping algorithm.

UNIT - IV

8. Discuss about different Illumination models in detail.

(OR)

9. Explain about splines and Bezier curves and its mathematical representations.

UNIT - V

10. Derive 3-D translation and rotation matrices with respective to co-ordinate axis.

(OR)

11. Describe the features of different computer animation languages.

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12-00-3-03R

MASTER OF COMPUTER APPLICATIONS DEGREE EXAMINATION,

MARCH - 2024

THIRD SEMESTER

PAPER : MCA 303 - WEB TECHNOLOGIES

(Under CBCS New Regulations w.e.f. 2020-2021)

(Common paper to University and all Affiliated Colleges)

Time : 3 Hours **Max. Marks : 70**

PART - A

(Compulsory)

Answer any **FIVE** of the following questions. Each question carries 4 marks. **(5×4=20)**

1. a) What is frame? How will you divide the web page into frames?
   b) What do you mean by "class" and "id" in CSS? Show the use of external CSS with example?
   c) Write syntax of Javascript? Describe different data types in Javascript.
   d) Write a javascript to demonstrate of checkbox and radio buttons.
   e) What are the technologies used by AJAX?
   f) Write about features of Tomcat Server.
   g) What are various operators supported by PHP?
   h) Write about ZEND framework applications.
   i) How to access a database from a JSP? Give the syntax.
   j) Explain the differences between Generic Servlet and HttpServlet.

PART - B

Answer **FIVE** questions, choosing **ONE** question from each unit. Each question carries **10** marks. **(5×10=50)**

UNIT - I

2. Show the structure of an HTML page with some basic tags. Write HTML code for Embedding a table in a web page.

(OR)

3. Give the advantages of CSS and explain the following terms related to CSS :

i. Font size
ii. Font weight
iii. Font stretch
iv. Text decoration
v. Text transformation
vi. Text alignment
vii. Padding.

UNIT - II

4. a) Explain about event handling in JavaScript.
   b) Write a JavaScript to check mobile number (mobile no. should start with 9 or 8).

(OR)

5. a) Describe any four JQuery objects.
   b) Write a JavaScript to check input string is palindrome or not.

UNIT - III

6. What is JSON in AJAX? What are the different types of post back in AJAX?

(OR)

7. a) What are the different ready states of a request in AJAX?
   b) How to deploy a web application in IIS server?

UNIT - IV

8. a) Explain about the control structures in PHP with illustrations.
   b) Write a PHP program to add array elements taken as input.

(OR)

9. a) Illustrate to declare the functions in PHP with suitable example.
   b) Write a PHP script to print following pattern.

```
1
01
101
0101
10101
```

UNIT - V

10. Describe the servlet architecture and the interfaces invoked by the servlet container.

(OR)

11. a) Explain about the anatomy of a JSP page.
    b) Write short notes on Java server page scriptlets.

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concat ()
charAt()

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12-00-3-06R

MASTER OF COMPUTER APPLICATIONS DEGREE EXAMINATION,

MARCH - 2024

THIRD SEMESTER

PAPER : MCA 304 C : SYSTEMS PROGRAMMING

(Under C.B.C.S. New Regulations w.e.f. 2020-2021)

(Common paper to University and Affiliated Colleges)

Time : 3 Hours **Max. Marks : 70**

PART - A

(Compulsory)

Answer any **Five** of the following questions. Each question carries **4** marks. **(5×4=20)**

1. a) Define System Software and explain.
   b) What are the features of assemblers? Explain.
   c) What are the various loader design options?
   d) State and explain the basic functions of a linker.
   e) Define compiler and list out its functions.
   f) What is debugging? Explain with an example.
   g) What is device driver and what is the need of it.
   h) Give some examples of block driver-1.
   i) What is the purpose of X-Windows?
   j) How to execute Linux shell script?

PART - B

Answer **Five** questions. Choosing **One** question from each unit. Each question carries **10** marks. **(5×10=50)**

Unit - I

2. What are the features of SIC architecture? Explain how they are different from CISC and RISC.

(OR)

3. Explain in detail about various assembler design options and their implementation with examples.

Unit - II

4. Describe the machine independent features of macro processor.

(OR)

5. What are the features of machine dependent loaders? Explain their design issues.

Unit - III

6. List and explain different text editors and their features.

(OR)

7. Discuss about code generation and optimization process with examples.

Unit - IV

8. Describe about Character driver-1 and its design issues.

(OR)

9. Explain about character Driver-2 and the design issues of A/D converters.

Unit - V

10. What is Shell Script? List and explain basic shell scripting commands and explain.

(OR)

11. Write a detailed note on Linux Administration Tools and their purpose.

Instruction set
Memory Layout consideration
Addressing Modes
Register usage.
OS Interface
Binary format compatibility

Reloc
symbolic solution.

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12-00-3-09R

MASTER OF COMPUTER APPLICATIONS DEGREE EXAMINATION, MARCH - 2024

THIRD SEMESTER

Paper - MCA 305 C : MOBILE APPLICATION DEVELOPMENT

(Under CBCS New regulations w.e.f 2020-2021)

(Common paper to University and all Affiliated Colleges)

Time : 3 Hours **Max. Marks : 70**

PART - A
(Compulsory)

Answer any **FIVE** of the following questions. Each question carries **4** marks. **(5×4=20)**

1. a. What is an embedded system? Provide examples of embedded systems used in mobile applications.
   b. What are the different types of mobile applications? Provide examples of each.
   c. What are some common security vulnerabilities in mobile applications?
   d. Discuss the various types of embedded operating systems.
   e. What are some common use cases for cloud storage in mobile apps, and what are some best practices for implementing cloud storage?
   f. What are the data protection challenges associated with cloud computing?
   g. Explain the differences between a content provider, a broadcast receiver, and a service in Android.
   h. Explain the concept of views in Android, and how they relate to activities.
   i. What is the difference between IoS and other mobile operating systems?
   j. What are the limitations of using touch events in IoS?

PART - B

Answer **FIVE** questions, Choosing **one** question from each unit. Each question carries **10** marks. **(5×10=50)**

Unit - I

2. Discuss the market and business drivers for mobile applications. How have these drivers evolved over time?

(OR)

3. Explain the importance of requirements and validation in mobile application development. How can developers ensure that their apps meet the needs of their users and perform as expected?

Unit - II

4. Explain the importance of modifiability in mobile application development. What are some key factors to consider when designing mobile apps for modifiability, and how can modifiability be achieved while maintaining usability and performance constraints?

(OR)

5. Discuss the various methods of input available in mobile applications, including touch, voice, and gesture recognition. What are some advantages and disadvantages of each input method?

Unit - III

6. Discuss the importance of web access in mobile applications. What are some common methods for integrating web access into a mobile app?

(OR)

7. What are the best practices for integrating GPS and social media networking applications in business?

Unit - IV

8. Explain the Android application architecture and its different layers.

(OR)

9. What is SQLite, and how can you use it to persist data in an Android app?

Unit - V

10. Explain the differences between Core Data and SQLite. Describe the best practices for using Core Data in IoS apps?

(OR)

11. Explain the difference between Core Location and Map Kit in IoS. What are the limitations of using Core Location in IoS apps?

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4-75-316R

MASTER OF COMPUTER APPLICATIONS DEGREE EXAMINATION, MARCH - 2024

THIRD SEMESTER

Paper - 316 - DIGITAL MARKETING (Open Elective)

(Revised Regulations w.e.f. 2021-2022)

(Common Paper to University and Affiliated Colleges)

Time : 3 Hours **Max. Marks : 70**

PART - A

(Descriptive/Numerical Type Questions)

Answer any FIVE questions. Each question carries 10 marks. **(5×10=50)**

1. What are the key drivers of Digital Marketing? Explain in details.

(OR)

2. Write a note on Online Marketing Mix and Digital Signage.
3. Explain the concept of SEO. Discuss various forms of Search Engines.

(OR)

4. A smart watch company wants to do competitive intelligence in terms of web analytics. Suggests the company methods used for tracking competitive intelligence.
5. How do you customize the offering online? State the dimensions of Branding online.

(OR)

6. Anima has a blog of receipt where she writes, Share and Puts Video of World-Wide cuisines. Suggest her method of off-page optimization of SEO.
7. How do you design and develop a Channel for online business?

(OR)

8. Write a brief notes on the following:
   i. Viral Marketing
   ii. Affiliate Marketing
   iii. Online Intermediaries

9. Compare and contrast the features and uniqueness of different social publishing media (Tumblr, Pintrest, Stumble Upon etc).

(OR)

10. Discuss the legal and ethical aspects related to digital marketing.

PART - B

(Case Analysis) **(20)**

11. Jeans have a wide appeal and acceptance in the country for their functional and symbolic value. Initially, Jeans as a symbol of westernization "Caught" on the urban markets with a good number of foreign brands enjoying strong brand equity in the market. Over the last two decades the appeal of jeans has spread to rural and semi urban markets and consumers in these markets are highly driven by the "aspirational" appeal of jeans.

Apache, a brand of jeans has grown significantly in the last few years. The interesting aspect of this brand is that it is made of fine 2 ply twill, micro buffeted and enzyme washed for softness and is not made of denim. The brand is available in few colours (other than the conventional denim blue) and in few cities.

Questions:

a) What kind of psychological factors can be used by the brand to influence consumer behaviour in the jeans market through social media ?

b) Develop a suitable online communication strategy for the brand for this product.