

No. of Printed Pages : 03

Roll No. 18008541927

EE681

M. C. A. EXAMINATION, Dec. 2019

(Fifth Semester)

(B. Scheme) (Main & Re-appear)

MASTER OF COMPUTER APPLICATIONS

MCA601

Advanced Java

Time : 3 Hours]

[Maximum Marks : 75

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit.

Unit I

1. (a) What is a thread ? Explain, how to run multiple threads in java ? 7
- (b) What are Collections ? How are they helpful in creating dynamic data structures ? 8
2. What are Sockets ? How are they created ? Explain with the help of a program in JAVA. 15

Unit II

3. (a) How to get the result sets from a database query ? Explain. 7
- (b) Discuss the concept of LDAP with its implementation strategy in java. 8
4. What is Java RMI ? What are major benefits of programming with JAVA RMI ? Explain the main components of the RMI. 15

Unit III

5. (a) Write a program in java using swings to implement the functionality of progress bar. 7
- (b) What is a Java Applet ? Write a program to show a moving text with the help of an applet. 8
6. (a) List any *eight* functions related to java.awt package with their usage. 7
- (b) Write a program to illustrate the usage of drag and drop facility in AWT. 8

Unit IV

7. (a) Describe relationship between JSP and Servlet. 7
- (b) What are Customizers ? Explain. 8
8. (a) Discuss various naming patterns for Java Beans. 7
- (b) What is encryption ? How is it implemented in Java ? 8

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MASTER OF COMPUTER APPLICATIONS

MCA603

Net Framework with C#

Time : 3 Hours]

[Maximum Marks : 75

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Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit.

Unit I

1. Draw and explain architecture of Dot Net framework. Also discuss common type system (CTS). 15
2. Write a program in C# to explain the following concepts :
 - (a) Inheritance
 - (b) Polymorphism
 - (c) Overloading. 15

Unit II

3. Write a program to create a thread with normal priority and display following information of the current thread : its name, priority whether thread is alive or not, its context id, whether thread is foreground thread or not. 15
4. Write a program in C# to print sum of prime numbers from 1 to n . Also find complexity of algorithm. 15

Unit III

5. Explain the web service architecture. What are the steps involved in the creation and consumption of web services ? Explain with example. 15
6. Explain the following in C# libraries : 15
 - (a) Multithreading
 - (b) Sockets
 - (c) Window Forms.

Unit IV

7. Explain the following advanced features of C# :
 - (a) ASP.net web form control
 - (b) Graphical device interface. 15
8. Write short notes on the following :
 - (a) Distributed application in C#
 - (b) Dot Net assemblies. 15

Table buttons

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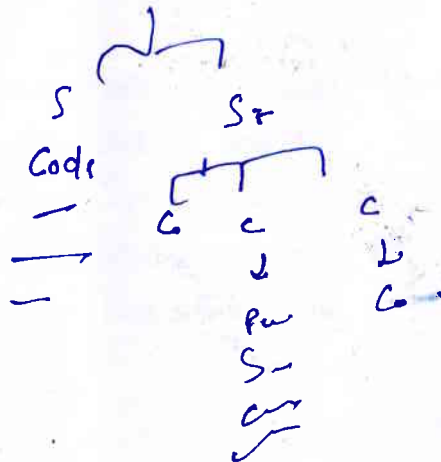
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 Process improvement
 ISO 9000:200 guideline

levels of software
 Testing

Diff → Validation and verification
 Error and Bug

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(Fifth Semester)

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MASTER OF COMPUTER APPLICATIONS

MCA605

Software Project Management

Time : 3 Hours]

[Maximum Marks : 75

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt *Five* questions in all, selecting at least *one* question from each Section.

Section A

1. (a) Describe, how the objectives and scope of a software project are identified ? **8**
(b) List the guidelines to be followed while allocating resources in a software project. **7**
2. Identify the main differences between managing the development of a conventional software project and an outsourced S/W project. **15**

Section B

3. (a) What do you mean by activity float ? How is it measured ? **7**
(b) What do you mean by software prototyping ? Discuss different types of prototypes. **8**
4. (a) What are the benefits of activity prioritization ? Discuss any *two* methods generally used for activity prioritization. **8**
(b) Write the steps followed during a change control procedure. **7**

Section C

5. Write and explain any *two* strategies for getting a project back to target if it is not running as per schedule. **15**
6. (a) Describe the fair recruitment approach which is free from any bias. **8**
(b) Explain the "Expectancy theory of Motivation". **7**

Section D

7. Describe the issues which should be addressed by any project management software ? To what extent Project 2000 addresses these issues ? Justify your answer. **15**
8. (a) Quality and reliability are related concepts but are fundamentally different in a number of ways. Explain, how ? **9**
(b) Explain the differences between a quality circle and a review group . **6**

Unit IV

7. (a) What do you understand by shell variables ? Explain briefly. 7½
- (b) Write a shell script to find the smallest of three numbers that are read from the keyboard. 7½
8. (a) Explain in brief the GREP and EGREP command with example. 7½
- (b) How would you invoke Awk ? Explain the use of regular expression in Awk. 7½

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(Fifth Semester)

(B. Scheme) (Main & Re-appear)

MASTER OF COMPUTER APPLICATIONS

MCA651

Linux and Shell Programming

Time : 3 Hours]

[Maximum Marks : 75

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

Unit I

1. (a) Discuss basic feature of LINUX operating system. 7½
- (b) Explain the kernel-shell relationship with the help of a neat diagram. 7½

2. (a) List the various permissions used for files and directories in Linux ? How can you change the permissions using chmod. chgrp. chown commands ? 10
- (b) What is the difference between the following commands :
 - (i) cp and copy
 - (ii) cp and my
 - (iii) comm and cmp
 - (iv) comm and diff. 5

Unit II

3. (a) Write sequence of vi commands to exchange top three lines with bottom three lines of the screen on the vi session. 10
- (b) Explain the *three* modes of the Vi-Editor. 5
Command, insert, command line

4. Explain the redirection, filter and pipes in Linux with suitable examples. 15

Unit III

5. (a) How are groups created and managed ? Explain. 7½
- (b) What are File Attributes ? Explain, how to change basic file permissions, with an example ? 7½

6. Discuss various system administrative tasks. Mention the important configuration files and purposes. 15

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MASTER OF COMPUTER APPLICATIONS

MCA661

Software Testing and Quality

Time : 3 Hours]

[Maximum Marks : 75

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Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

Unit I

1. Describe the term "Regression Testing" ? How is it performed ? Write and explain *three* methods to perform regression testing with relative advantages and disadvantages of each. 15
2. (a) Write at least *five* factors for determining the limits of software testing. 7
(b) "Software testing is an incremental process." Justify the statement. 8

Unit II

3. "White-box testing is complementary to black-box testing, not an alternative." Justify the statement. 15
4. (a) Describe four issues especially related with testing of web-based applications. 10
(b) Define Cyclomatic Complexity of a program. How can it be related to independent paths ? Explain with some examples. 5

Unit III

5. List the major software quality attributes. What are the different activities to carried out during software quality assurance ? List any *five* responsibilities of a quality control auditor. 15
6. (a) Define software quality assurance. Describe any *two* SQA techniques. 8
(b) What are different activities covered under program review process ? How do they help in improving the quality of a software product ? 7

Unit IV

7. Describe the guidelines specified in ISO 9004 : 2000 quality management systems for performance improvements. 15
8. Write short notes on the following :
(a) Statistical Sampling Techniques.
(b) Pareto Diagrams. 15