

Total No. of Questions—7]

[Total No. of Printed Pages—2

Seat No.	
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[4972]-101

MCM (First Semester) EXAMINATION, 2016
FUNDAMENTALS OF INFORMATION TECHNOLOGY
(2012 PATTERN)

Time : Three Hours

Maximum Marks : 70

N.B. :— (i) Question No. 7 is compulsory.

(ii) Solve any *five* out of the remaining questions.

1. Solve the following (any *five*) : [10]
 - (a) $(46)_{10} = (?)_2$
 - (b) $(100111)_2 = (?)_{10}$
 - (c) $(DC8)_{16} = (?)_2$
 - (d) $(35)_{10} = (?)_2$
 - (e) $(101011110)_2 = (?)_8$
 - (f) $(01110111011110)_2 = (?)_6$

2. Discuss various functions of operating system. [10]

3. Discuss various generations of computer. [10]

4. Explain OSI model in detail. [10]

5. Explain various input devices in brief. [10]

P.T.O.

6. Compare Magnetic tape with magnetic disk. [10]

7. Write short notes on (any *four*) : [20]

(a) Batch processing system

(b) LAN Vs WAN

(c) Printer

(d) Types of computer

(e) Interpreter Vs Compiler.

Total No. of Questions—7]

[Total No. of Printed Pages—4

Seat No.	
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[4972]-102

M.C.M. (First Semester) EXAMINATION, 2016

C PROGRAMMING AND DATA STRUCTURE

(2012 PATTERN)

Time : Three Hours

Maximum Marks : 70

N.B. :- (i) Q. No. 1 is compulsory.

(ii) Solve any *five* questions from the remaining.

(iii) Figures to the right indicate full marks.

1. (A) Trace the output and justify the answer. Assume suitable header files. [12]

(a) void main()

{

int a[5] = {5, 1, 15, 20, 25};

int i, j, m;

i = ++a[1];

j = a[1]++;

m = a[i++];

printf("%d, %d, %d, i, j, m")

}

P.T.O.

(b) `int main()`
`{`
`int a = 500, b = 100, c;`
`if(!a > = 400)`
`b = 300;`
`c = 200;`
`printf("b = %d c = %d\n", b, c);`
`return 0;`
`}`

(c) `void main()`
`{`
`int x = 3;`
`float y = 3.0;`
`if(x == y)`
`printf("x and y are equal");`
`else`
`printf("x and y are not equal");`
`}`

(d) What will be the content of 'file.c' after executing the following program ?

```
#include<stdio.h>
int main( )
{
    FILE *fp1, *fp2;
    fp1 = fopen("file.c", "w");
```



```
        fp2 = fopen("file.c", "w");
        fputc('A', fp1);
        fputc('B', fp2);
        fclose(fp1);
        fclose(fp2);
        return 0;
    }
```

(B) Explain the following (any *two*) : [8]

- (a) Linked list
- (b) String functions
- (c) Loop statements in C.

2. WAP to display the following pattern using nested loops : [10]

```
    A
   AB
  ABC
 ABCD
```

3. WAP to accept two 3×3 matrices and display the addition on the screen. [10]

4. Write a function which receives a number and return 1 if the number is prime otherwise 0. [10]

5. Write a program to accept itcode, desc, rate and qty of 30 items. Display all the records in tabular form having qty greater than 10. [10]

6. Write a program to accept the two file names from the command line arguments and copy the contents of first file to the second file. [10]

7. Write a program to accept the 10 numbers and display the numbers by sorting them in ascending order. [10]

Total No. of Questions—6]

[Total No. of Printed Pages—3

Seat No.	
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[4972]-103

MCM (First Semester) EXAMINATION, 2016

103 : SOFTWARE ENGINEERING WITH UML

(2012 PATTERN)

Time : Three Hours

Maximum Marks : 70

- N.B. :—**
- (i) Question Nos. 1 and 6 are compulsory.
 - (ii) Solve any *three* questions of the remaining.
 - (iii) Neat diagrams carry marks.

1. 'Bhojan' a well-know restaurant wants to start home delivery of food.

The following information has been gathered by System Analyst :

- Customer places order by phone or in person.
- Reception clerk fills the order form in duplicate, one is given to Kitchen manager and other retained as an office copy.
- Kitchen manager prepares KON (Kitchen Order Note) in triplicate sending two to the kitchen and third to Account Department.
- Kitchen prepares food as per the order, sends it to the reception along with signed copy of KON.
- Account department prepares the bill in duplicate, sending one to reception and other is retained as office copy.

P.T.O.

- Delivery boy delivers the food and bill to the customer.
 - Customer pays the bill in cash after receiving food.
 - Cash is submitted to Account Department by delivery boy at the end of day.
- (a) Draw 1st Level DFD. [10]
- (b) Draw ERD. [10]
- (c) Design Bill Report layout. [5]
- 2.** Draw use case diagram for withdraw amount from ATM machine. [10]
- 3.** Explain RUP in detail. [10]
- 4.** Admission of MCM course follows below given procedural rules :
- Student must have minimum 40% in any degree from any recognized university.
 - Must have Maths/Stat subject in 12th or degree.
 - For reserved category exemption of 5% is given.
 - CET Score should be minimum 50%.
- Draw Decision Tree and Decision Table for the above case. [10]
- 5.** Explain Spiral Model in SDLC. [10]

6. Write short notes on (any *three*) : [15]

(a) Collaboration diagram Vs Deployment diagram

(b) Role of system analyst

(c) SRS

(d) Object, class and its relationship

(e) Data Encapsulation and Inheritance.

Total No. of Questions—7]

[Total No. of Printed Pages—3

Seat No.	
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[4972]-104

M.C.M. (First Semester) EXAMINATION, 2016

104 : DATABASE MANAGEMENT SYSTEM

(2012 PATTERN)

Time : Three Hours

Maximum Marks : 70

N.B. :— (i) Question No. 1 is compulsory.

(ii) Solve any *five* from the remaining.

(iii) Make necessary assumptions wherever required.

(iv) Figures to the right indicate full marks.

1. (a) The management of Sahyadri hospital has decided to computerize their operations. The following information is provided by the management. There are resident, full time and consulting doctors, with various specializations. Consulting doctor visits the hospital at fixed time every day or some days of the week. The visiting charge varies from doctor to doctor. A patient is admitted in to a room which has certain category and having fixed charge per day. While admitting patients into hospital their main cause of admission is recorded.

Draw entity relationship diagram for the above case and convert it into tables. [10]

P.T.O.

(b) Normalize the following mobile bill form up to 3NF : [10]

Plan Number

Plan Name

Customer Name

Customer Address

Customer Number

Mobile Number

Bill Number

Bill Date

Due Date

Credit Limit

Net Chargeable Calls

Call Charges

Value Added Service Charges

Free Calls

Rent

Service Tax

Previous Balance

Bill Amount

Amount To Be Paid After Due Date.

2. Explain various keys with example in relational database. [10]

3. (a) Explain various users of database. [5]

(b) What are ACID properties of transactions ? [5]

4. Explain Codd's rules. [10]

5. Explain the concept of check pointing. State when and how it occurs. [10]
6. What is deadlock ? Explain deadlock solution method. [10]
7. Write short notes on (any *two*) : [10]
- (i) Encryption
 - (ii) Data mining
 - (iii) Shadow paging.

Total No. of Questions—7]

[Total No. of Printed Pages—2

Seat No.	
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[4972]-201

M.C.M. (Second Semester) EXAMINATION, 2016

201 : BUSINESS APPLICATION AND ERP TOOLS

(2012 PATTERN)

Time : Three Hours

Maximum Marks : 70

N.B. :- (i) Question Nos. 1 and 7 are compulsory.

(ii) Solve any *three* from the remaining.

1. Explain entire procedure of material procurement starting from indenting to bill passing with the help of Data Flow Diagram. Draw format of Goods received note. [20]
2. Explain any *two* reports for sales analysis of an organization manufacturing multiple products with sales outlets spread across the country. [10]
3. Explain purpose of profit and loss statement. Draw format of profit and loss statement. [10]
4. Explain ERP Implementation Cycle in detail. [10]
5. Explain employee appraisal system in detail. [10]

P.T.O.

6. Explain post-implementation review of ERP Package of non-manufacturing (other) organizations. [10]
7. Write short notes on (any *four*) : [4×5=20]
- (a) Down-time analysis
 - (b) Pending Customer Orders
 - (c) Ratios
 - (d) User Training
 - (e) Bonus Calculation.

Total No. of Questions—7]

[Total No. of Printed Pages—2

Seat No.	
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[4972]-202

M.C.M. (Second Semester) EXAMINATION, 2016

**104 : PRINCIPLES AND PRACTICES OF MANAGEMENT AND
ORGANIZATIONAL BEHAVIOUR**

(2012 PATTERN)

Time : Three Hours

Maximum Marks : 70

- N.B. :-** (i) Question Nos. 1 and 6 are compulsory.
(ii) Attempt any *four* from the remaining.
(iii) Figures to the right indicate full mrks.

1. Explain the concept of management and discuss Line and Staff managers. [15]
2. Explain how motivation helps to achieve success in an IT industry. [10]
3. Explain OB and state the important elements of the behavioural approach. [10]
4. Explain the contribution of F.W. Taylor in the evolution of management thoughts. [10]
5. Define organization and explain the Functional organization in brief. [10]

P.T.O.

6. Explain conflict management in brief. [10]
7. Write short notes (any *three*) : [15]
- (a) Theory Z
 - (b) Johari window
 - (c) Team Building
 - (d) Decision making types
 - (e) Managerial skills.

Total No. of Questions—7]

[Total No. of Printed Pages—3

Seat No.	
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[4972]-203

M.C.M. (Second Semester) EXAMINATION, 2016

203 : ADVANCED RDBMS USING ORACLE

(2012 PATTERN)

Time : Three Hours

Maximum Marks : 70

- N.B. :—** (i) Question No. 1 are 7 are compulsory.
(ii) Attempt any *three* from the remaining.
(iii) Figures to the right indicate full marks.

Consider the following tables to solve queries and PL / SQL given below :

Doctor (dno, dname, city)

Patient (opdno, Pat_name, Address, Disease)

Treatment (dno, opdno, date_of_visit, fee_paid).

1. Solve any *ten* queries given below : [20]
- (1) Display names of doctors living in Pune city.
 - (2) Display name of the doctors who treated "Malaria" patients.
 - (3) Add "contact-no" column to patient table.
 - (4) Display the name of the patients whose 1st letter starts with 'A', 3rd character is 'm' and the rest of character will be any.
 - (5) Find the name of the patients who are treated by "Dr. Mishra".

P.T.O.

- (6) Count the number of patients suffering from "Malaria" and treated by "Dr. Mishra".
 - (7) Display the total fees paid by patient "Amit" for his treatment.
 - (8) Count the number of patients visited between any *two* dates.
 - (9) Display the name of patient who visited maximum number of times for treatment.
 - (10) Name the doctor who treated maximum number of patients.
 - (11) Display the number of patients treated by each doctor.
- 2.** Write a cursor to display top three names of the patient who visited most for "Malaria" treatment. [10]
- 3.** Write a procedure `display_info()` to Accept `opdno` and display the following details of that patient :
(`opdno`, `Pat_name`, `dname`, `date_of_visit`) [10]
- 4.** Write a function to Accept the `dno` and display the total number of patients treated by that doctor. [10]
- 5.** Write a package specification and body which contains followings : [10]
- (a) A procedure which accept the 5 digit number and display sum of digits.
 - (b) A functions which accept 3 numbers and return sum of their cubes.

6. Write a trigger on treatment on treatment to allow patients to visit for their treatment between 10 : 00 A.M to 3 : 00 P.M. only. [10]
7. Write short notes (any *four*) : [20]
- (a) Set operators
 - (b) View
 - (c) To-char() and T-date() functions
 - (d) DML statements
 - (e) Lock in oracle.

Total No. of Questions—7]

[Total No. of Printed Pages—2

Seat No.	
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[4972]-204

M.C.M. (Second Semester) EXAMINATION, 2016

204 : JAVA PROGRAMMING

(2012 PATTERN)

Time : Three Hours

Maximum Marks : 70

- N.B. :—** (i) Question No. 1 is compulsory.
(ii) Solve any *four* from remaining.
(iii) Figures to the right indicate full marks.

1. Answer the following : [10]
 - (a) What is <apple> ? What are its attributes ?
 - (b) What is a thread priority ?
 - (c) What are adapter classes ?
 - (d) Write code to add text field in north region of Border layout.
 - (e) List any four methods of vector class.

2. Accept number from user, if number is odd then fire user defined "OddNumException". [15]

3. Write an item class with item_no, item_name, total_quantity and price. Accept details from user. Display all details along with cost of every item for given total quantity. [15]

4. Design an applet with two text fields and *two* buttons on it. Accept a number in first text field. If SQUARE button is pressed, then display square of the number in second text field. If CUBE button is pressed then display cube of that number in second text field. [15]

P.T.O.

5. Write a student class with rollno, name, marks, course as instance variables, print() method, over loaded constructors. Accept details of 5 students from user and display accepted details. [15]
6. Write java application to accept 15 integer values in an array. Display array and maximum, minimum and sum of all values in an array. [15]
7. Write notes on (any *three*) : [15]
 - (a) Packages
 - (b) Thread Priority
 - (c) Garbage Collection
 - (d) Random Access File.

Total No. of Questions—7]

[Total No. of Printed Pages—1

Seat No.	
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[4972]-301

M.C.M. (Third Semester) EXAMINATION, 2016

301 : INFORMATION SECURITY AND AUDIT

(2012 PATTERN)

Time : Three Hours

Maximum Marks : 70

N.B. :— (i) Question No. 7 is compulsory.

(ii) Solve any *five* from the remaining.

1. Explain the importance of physical security and Biometric control for protecting information security assets. [12]
2. Discuss SSE-CMM model in detail. [12]
3. What is firewall ? How does it help to secure the information assets. [12]
4. How Encryption and Decryption helps to maintain security ?
5. Describe the role of DBA in auditing process. [12]
6. Explain the security of wireless networks. [12]
7. Write short notes on any *two* : [5×2=10]
 - (a) Digital Signature
 - (b) Copy right
 - (c) Intrusion detection system.

[4972]-301

Total No. of Questions—7]

[Total No. of Printed Pages—2

Seat No.	
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[4972]-302

M.C.M. (Third Semester) EXAMINATION, 2016
302 NT : BASICS OF NETWORK TECHNOLOGIES
(Networking Specialization-I)
(2012 Pattern)

Time : Three Hours

Maximum Marks : 70

N.B. :— (i) Q. Nos. 1 and 7 are compulsory.

(ii) Solve any *three* from the remaining.

1. (a) Explain steps for installation of Apache Web Server in Linux. [10]
(b) Explain steps for installation of Windows Server 2003. [10]
2. Explain process management commands in Linux. [10]
3. Explain steps for installation of Active Directory and Domain Controller in Windows Server 2003. [10]
4. Explain Windows Rights Management Services in detail. [10]
5. Explain steps for package installation in Linux. [10]
6. What is DHCP ? Explain steps to implement DHCP Server in Windows Server 2003. [10]

P.T.O.

7. Write short notes on (any *four*) :

[20]

- (a) .Net Framework
- (b) VPN
- (c) Compare IPV₄ and IPV₆
- (d) Ethernet
- (e) Mail protocols.

Total No. of Questions—7]

[Total No. of Printed Pages—2

Seat No.	
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[4972]-303

MCM (Third Semester) EXAMINATION, 2016

303 NT : SERVER AND DESKTOP TECHNOLOGIES

(Networking Specialization—I)

(2012 PATTERN)

Time : Three Hours

Maximum Marks : 70

N.B. :— (i) Question Nos. 1 and 7 are compulsory.

(ii) Attempt any *three* from the remaining.

1. (a) What is Interrupt ? Explain various types of interrupts. [10]
(b) Explain 32-bit (80486) Architecture in detail. [10]
2. Explain USB, Serial and Parallel Port with its functioning. [10]
3. Explain steps for Windows 7 clean install. [10]
4. Explain process of installation of auto-updates and Services Packs in Windows XP. [10]
5. Explain working of Printer. State features of various types of Printers. [10]

P.T.O.

6. Explain user profile management in Windows XP. [10]

7. Write short notes on (any *four*) : [4×5=20]

- (a) Partitions Types
- (b) RAMS
- (c) CISC
- (d) Pen Drives
- (e) Data Recovery Tools.

Total No. of Questions—8]

[Total No. of Printed Pages—2

Seat No.	
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[4972]-304

M.C.M. (Third Semester) EXAMINATION, 2016
304 NT : SYSTEM ADMINISTRATION AND SERVER
INTEGRATION
(Networking Specialization-III)
(2012 PATTERN)

Time : Three Hours

Maximum Marks : 70

N.B. :- (i) Question No. 8 is compulsory. Solve any *Five* from the remaining.
(ii) Draw neat diagrams whenever necessary.

1. Explain Installation steps for Fedora core operating system in graphical mode. [10]
2. Explain the steps for implementing Web Services using IIS in windows. [10]
3. Explain default directories structure in Linux. [10]
4. What is Firewall ? Explain the procedure to configure firewall in Linux. [10]
5. What is active directory ? Explain the steps implements active directory and domain controller in windows server 2003. [10]
6. What are the features of windows server 2008 ? Explain functionality of directory domain services. [10]

P.T.O.

7. Explain user management and group management and their security rights in windows server 2003. [10]
8. Write short notes on (any *four*) : [20]
- (a) Process Management Commands in Linux
 - (b) Yum Package Management
 - (c) Advantages of Distributed OS
 - (d) IIS Server of 2003 server
 - (e) Linux Directory Structure

Total No. of Questions—6]

[Total No. of Printed Pages—2

Seat No.	
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[4972]-305

M.C.M. (Third Semester) EXAMINATION, 2016

302ST : SOFTWARE TESTING SPECIALIZATION-I

(Software Quality Assurance)

(2012 PATTERN)

Time : Three Hours

Maximum Marks : 70

N.B. :— (i) Solve any *five* questions.

(ii) Figures to the right indicate full marks.

1. What is IEEE 1012 standard ? Explain it in detail. [14]

2. Define software projects and explain importance of scope management, Time management, Risk management. [14]

3. (a) Explain McCall's Quality Model. [10]
(b) What is CASE Tool ? [4]

4. (a) Define Software Quality. Describe need and importance of Quality. [10]
(b) What is Contract Review ? [4]

P.T.O.

5. Explain different components of SQA Infrastructure. [14]

6. Write short notes on (any *two*) : [14]

(a) Release and version control

(b) ISO 9001 and ISO 9000-3

(c) Verification and Validation.

Total No. of Questions—**6**]

[Total No. of Printed Pages—**1**

Seat No.	
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[4972]-306

MCM (Third Semester) EXAMINATION, 2016

303 ST : SOFTWARE TESTING PROCESSES AND DOCUMENTATION

(Software Testing Specialization)

(2012 PATTERN)

Time : Three Hours

Maximum Marks : 70

N.B. :— (i) Question Nos. **1** and **6** are compulsory.

(ii) Solve any *three* of remaining.

1. Explain software testing life cycle in detail with diagram. [14]

2. Attempt the following : [2×7=14]
 - (a) Explain incremental testing in detail.
 - (b) Explain White Box Vs Black Box testing.

3. Discuss COTS software test process in detail. [14]

4. Explain static and dynamic testing in detail. [14]

5. Explain testing of E-commerce application in detail. [14]

6. Write short notes on (any *two*) : [2×7=14]
 - (a) Testing Distributed application
 - (b) Penetration point matrix
 - (c) Requirement Tracing.

Total No. of Questions—7]

[Total No. of Printed Pages—2

Seat No.	
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[4972]-307

M.C.M. (III Sem.) EXAMINATION, 2016

304-ST : SOFTWARE TEST PLANNING AND DOCUMENTATION

(Software Testing Specialization—III)

(2012 PATTERN)

Time : Three Hours

Maximum Marks : 70

N.B. :— (i) Question No. 7 is compulsory.

(ii) Solve any *five* from the remaining.

1. Define test plan. Explain characteristics of software being developed. [12]
2. Differentiate between user's role and tester's role in software testing. [12]
3. What is User Acceptance Testing ? Explain acceptance test execution. [12]
4. What is risk ? Explain risk associated with software testing. [12]
5. Explain functional test cases and stress test cases. [12]

P.T.O.

6. What is defect in testing ? Explain defect management in detail. [12]

7. Write short notes on any *two* : [2×5=10]

(a) Test plan standards

(b) Constraints in test plan

(c) Histogram.

Total No. of Questions—8]

[Total No. of Printed Pages—2

Seat No.	
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[4972]-308

M.C.M. (Third Semester) EXAMINATION, 2016
SOFTWARE DEVELOPMENT SPECIALIZATION-II
302SD : PROGRAMME AND DESIGN WITH ASP.NET
(2012 PATTERN)

Time : Three Hours

Maximum Marks : 70

N.B. :— (i) Q. No. 1 is compulsory.

(ii) Solve any *four* questions from Q. No. 2 to Q. No. 8.

(iii) Figures to the right indicate full marks.

1. Draw and explain .Net Framework architecture in detail. [10]
2. Explain any *five* Validation Controls in detail. [15]
3. Explain login control, login view control, login status control, Password recovery control and Create user wizard control in detail. [15]
4. Design a form and write code to : [15]
 - (a) Populate and display course names in a drop down list
 - (b) Select a course from drop down list and display its details in underlying text boxes
 - (c) Add a record
 - (d) Delete Selected Record
 - (e) Edit Selected RecordUse disconnected architecture. Name of Server : MyAspDB (SQL Server)
Name of Table : CourseMaster (CourseID, CourseName, Duration, Fee, NameOfFaculty, Venue)

P.T.O.

5. Define a class item with attributes ItemID, ItemName, Price, BrandName, QuantityInHand. Write default and parameterized constructor for the same. Write a method to check Item is available in stock or not. Write a main program to demonstrate your functionality. [15]
6. Explain client side state management techniques in detail. [15]
7. Explain the following controls (any *three*) : [15]
- (a) DropDownList Control
 - (b) ImageMap Control
 - (c) AdRotator Control
 - (d) HyperLink and LinkButton Control.
8. Write short notes on following (any *three*) : [15]
- (a) Creating and using MasterPages
 - (b) Creating and Using WebService
 - (c) Introduction to WPF, WCF, and WWF
 - (d) Exception Handling.

Total No. of Questions—8]

[Total No. of Printed Pages—2

Seat No.	
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[4972]-309

MCM (Third Semester) EXAMINATION, 2016
303 S.D. : MOBILE PROGRAMMING USING ANDROID
(Software Development Specialization—II)
(2012 PATTERN)

Time : Three Hours

Maximum Marks : 70

N.B. :— (i) Question No. 8 is compulsory.
(ii) Solve any *five* from remaining.

1. Define a class rectangle with its length and breadth. [10]
Provide appropriate constructor(s), which gives facility of constructing rectangle object with default values of length and breadth as 0 or passing value of length and breadth externally to constructor.
Provide methods to calculate area() and perimeter of Rectangle.
2. Explain any four layouts with example in Android. [10]
3. A program that accepts two numbers and a operator like (+, – , *, /) as command line arguments and perform the appropriate operation indicated by operator. [10]
4. Explain Android-An open platform for mobile development and Android SDK features. [10]
5. Service Life Cycle and compare between Bound and unbound services. [10]

P.T.O.

6. Why are content providers used in Android ? What are the various steps involved in creating a content provider ? [10]
7. Select all records of a table employee, using database connectivity in android. [10]
(Assume fields for employee table).
8. Write short notes on (any *four*) : [20]
- (a) SQL Lite Open Helper
 - (b) Broadcaste Services Life Cycle
 - (c) Types of preferences in Android
 - (d) Android Architecture
 - (e) Views in Android.

Total No. of Questions—5]

[Total No. of Printed Pages—2

Seat No.	
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[4972]-310

M.C.M. (III Sem.) EXAMINATION, 2016

304-SD : ADVANCED JAVA

(Software Development Specialization—III)

(2012 PATTERN)

Time : Three Hours

Maximum Marks : 70

N.B. :— (i) Q. No. 1 and Q. No. 5 are compulsory.

(ii) Solve any *two* questions from Q. No. 2, Q. No. 3 and Q. No. 4.

1. Solve the following :

(a) Explain the things required to create JSP custom tags.

(b) Write the code to call stored procedure and explain prepared statement.

(c) Which are the methods of javax.servlet, Servlet Interface ?

(d) What is Request Dispatches ?

(e) Explain InetAddress and Socket class.

2. Write a program where a client sends a message to the server. The server reverses it.

3. Write a JDBC code to display details of students who have been granted scholarship.

P.T.O.

4. Write a servlet application to accept employee details from html page and insert them in employee table. (Assume suitable table structure).

5. Write short notes on :
 - (a) JSP Actions
 - (b) Types of session management
 - (c) Servlet life cycle
 - (d) RMI architecture
 - (e) Connection pooling.

Total No. of Questions—7]

[Total No. of Printed Pages—2

Seat No.	
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[4972]-401

M.C.M. (IV Sem.) EXAMINATION, 2016

401 : CURRENT TRENDS IN IT

(2012 PATTERN)

Time : Three Hours

Maximum Marks : 70

N.B. :— (i) Question Nos. 1 and 7 are compulsory.

(ii) Attempt any *three* from the remaining.

(iii) Support your answers with relevant examples and diagram.

(iv) Figures to the right indicate full marks.

1. A reputed institute of management want to start MCA programme only for working students. Institute is interested in having online admission process, fee payment process, teaching learning process and online examination process. Suggest various models of e-learning and find out best model for their requirements. [15]

2. Explain Electronic Payment Systems in brief. [15]

3. What is cloud computing ? Explain the Infrastructure as a Service (IaaS). [15]

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4. Explain Electronic Document Management (EDM) with their needs and appropriate example. [15]

5. Social Networking sites are the need of recent era. Discuss it with the various security issues of social networking sites with example. [15]

6. Explain how E-commerce can change Indian Business Scenario. Explain B2B, B2C, C2C concepts. Name any *five* E-commerce sites. [15]

7. Write short notes on (any *two*) : [10]
 - (i) Cloud Security
 - (ii) Computer Crimes
 - (iii) m-commerce
 - (iv) Mobile Shopping.