[19 f-A-7]

SARDAR PATELUNIVERSITY
M.Sc. IT (INTEGRATED) [NC] EXAMINATION
Vth SEMESTER
Monday, 06th November, 2017
10:00 a.m. to 1:00 p.m.
PS05CIIT01[Software Engineering- I]

Maximum Marks: 70

Q-1 Multiple Choice Question.[Each Question carries one Mark] [10]

1) _____ is the second step of design phase.

    A. Design Analysis
    B. System Design
    C. Black Box
    D. Detail Design

2) _____ activity is used to understand the needs, goals and constraints.

    A. Testing
    B. Design
    C. Requirement Specification
    D. Problem Analysis

3) PDL stands for

    A. Process Define Language
    B. Prefer Define Language
    C. Procedure Design Language
    D. Process Design Language

4) Which one is the key term used in design of a system?

    A. Module
    B. Data
    C. Process
    D. None

5) _____ is the method to identify the Risk

    A. Risk Identification
    B. Risk Assessment
    C. Risk Analysis
    D. Risk Control.

6) Number of subordinates associated with given module is known as

    A. Fan-Out
    B. Fan-In
    C. Dependency
    D. Module

7) Which of the following is a tool in design phase?

    A. Abstraction
    B. Refinement
    C. Information Hiding
    D. All of the above.

8) In structured design methodology the hierarchy of modules is represented by the _____.
   A. FlowChart
   B. Gantt Chart
   C. Pert Chart
   D. Structure Chart

9) When _____ type of variables is changed then some side effects are occurs.
   A. Static
   B. Dynamic
   C. Global
   D. None

10) A failure is produced only when there is a _____ in the system.
   A. Error
   B. Bug
   C. Problem
   D. Fault

Q-2 Give Answers for the following short questions. (Any ten) [20]

1 Justify the following..
   "A high quality SRS is prerequisite to high quality software"

2 What is Structured English?

3 Write a short note on Cost schedule - Milestone Graph.

4 Differentiate between Coupling and Cohesion

5 Differentiate between Top-down and Bottom-up approaches

6 What do you mean by "Automated Cross Referencing".

7 List the levels of Cohesion.

8 What do you mean by structured programming?

9 List the levels of Cohesion.

10 What do you mean by code reading?

11 Write at least 2 differences between fictional and structural testing.

12 Draw the diagram of levels of testing.

Q-3 A) Explain SQAP. [5]
B) What you mean by SRS? Explain Components of SRS. [5]

OR

Q-3 A) Explain Requirement specification in SRS. [5]
B) Explain Single variable model for cost estimation. [5]

Q-4 Explain COCOMO Model. [10]

OR

Q-4 What is detail design? Explain module specification techniques in detail. [10]

Q-5 A) Write a short note on Cohesion. [5]

B) Discuss the design objectives in detail with proper illustrations. [5]

OR

Q-5 A) What is design specification? Explain factors of it. [5]

B) Write a short note on Logic/Algorithm design. [5]

Q-6 A) Explain the Top-Down and Bottom-Up approach in coding. [5]

B) Explain the levels of testing. [5]

OR

Q-6 A) List all the rules to write the code in coding phase and explain any three of them (Programming Style). [5]

B) Define the following terms: Error, Fault and Failure. [5]

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[618A21]   SEAT No.＿＿＿＿   -No. of Printed Pages:2

SARDAR PATEL UNIVERSITY
M.Sc (IT) (Integrated) NC Examination
Semester V
Subject Code: PS05CIIT02
Subject: Computer Architecture
8th November, 2017

Time: 10:00 A.M to 01:00 P.M   Max Marks: 70
    Wednesday

Q.1 Multiple Choice Questions.   **10**

1. The ＿＿＿ register keeps tracks of the instructions stored in program stored in memory.
    A. Instruction pointer   B. Memory pointer
    C. Instruction counter   D. All of these

2. The time interval between adjacent bits is called the＿＿.
    A. Word-time   B. Bit-time
    C. Turn around time   D. Slice time

3. The size of OPR select operation is ＿＿.
    A. 2   B. 3
    C. 4   D. None of these

4. The ＿＿＿ register points at array of data.
    A. Stack pointer   B. Program Counter
    C. Address   D. None of these

5. One address instruction use ＿＿ register for all the data manipulation.
    A. AA   B. AB
    C. AC   D. None of these

6. A stack organized computer has ＿＿＿.
    A. Three-address Instruction   B. Two-address Instruction
    C. One-address Instruction   D. None of these

7. In computers, subtraction is carried out generally by ＿＿＿.
    A. 1's complement method   B. 2's complement method
    C. signed magnitude method   D. None of these

8. Which are the types of array processor?
    A. Attached array processor   B. SIMD array processor
    C. Both of the above   D. None of these

9. The branch logic that provides decision making capabilities in the control unit is known as ＿＿＿.
    A. controlled transfer   B. Conditional transfer
    C. unconditional transfer   D. None of these

10. In DMA the data transfer is controlled by ＿＿＿.
    A. Microprocessor   B. RAM
    C. Memory   D. None of these

(P.T.O)

(1)

Q.2 Answer the following questions in short. (Any 10)   20
         1. List and explain any six computer instructions.
         2. What is Operation Code?
         3. Explain basic registers.
         4. Explain base register addressing mode.
         5. Discuss infix notation with example
         6. Draw the bus organization for seven CPU register.
         7. List the Flynn's computers classification.
         8. Define Hardware Interlocks
         9. Explain Branch Target Buffer in brief.
         10. Draw the block diagram and Timing diagram of Handshaking where data transmission initiates by source.
         11. What is command mode?
         12. Explain peripherals with example.

Q.3(A) Discuss Instruction cycle.   06
  (B) Explain Timing and Control with diagram of control unit of basic computer.   04
<div align="center">OR</div>
Q.3(A) Write a short not on Control timing signal with diagram.   06
  (B) Explain Computer Bus System with figure in detail.   04

Q.4(A) Explain General Register Organization.   06
  (B) Write a short note on Data Manipulation Instructions.   04
<div align="center">OR</div>
Q.4(A) Write a short note on RPN.   06
  (B) Discuss Control Word in detail.   04

Q.5(A) Write a short note on SIMD Array Processor   06
  (B) Write a short note on pipelining.   04
<div align="center">OR</div>
Q.5(A) Discuss Matrix Multiplication in detail.   06
  (B) Explain Handling of Branch instruction in detail   04

Q.6(A) Explain I/O versus memory bus and Asynchronous Data Transfer.   05
  (B) Write a short note on DMA Controller.   05
<div align="center">OR</div>
Q.6(A) Write a short note on Asynchronous Serial Transfer in detail.   05
  (B) Write a short note on Handshaking data transfer procedure initiated by destination. (with figure)   05

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SARDAR PATEL UNIVERSITY
M.Sc.IT (Integrated) Examination, 5th Semester

Friday, 10th November, 2017.

Morning Time: 10:00 A.M to 01:00 P.M

Subject Code: PS05CIIT03/ Paper No: 03

Subject: Object Oriented Programming through Java

Total Weight age/Marks: 70

Q.1   Multiple Choice Questions.   10

1. JVM stands for _____?
   - A. Java Virtual Method
   - B. Java Versatile Machine
   - C. Java Virtual Machine
   - D. Java Variable & Methods

2. Which of the following is the correct declaration statement in java program?
   - A. int num=new int[5]
   - B. int num=new num[5]
   - C. int[] num=new int[5]
   - D. None of these

3. Which of the following is not assignment operator?
   - A. +=
   - B. ==
   - C. %=
   - D. =

4. Which of the following statements is true?
   - A. Java supports interfaces
   - B. Java supports operator overloading
   - C. Java supports pointers
   - D. Java supports multiple inheritance

5. _____ Methods must be override in the subclass.
   - A. public
   - B. final
   - C. abstract
   - D. static

6. Which package is used for creating and implementing applets?
   - A. java.lang
   - B. java.util
   - C. java.applet
   - D. java.awt

7. Character streams can be used to read and write ____Unicode characters.
   - A. 4 - bit
   - B. 16 - bit
   - C. 32 - bit
   - D. 64 - bit

8. All syntax errors are known as _____ errors.
   - A. Run-time
   - B. Exception
   - C. Logical
   - D. Compile-time

9. The paint method accepts _____ type of argument.
   - A. Graphics
   - B. Graphic
   - C. Drawing
   - D. None of these

10. Through the applet life cycle _____ state occur only once.
    - A. Running
    - B. Idle
    - C. Born
    - D. None of these

(P.T.O)

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Q.2   Answer the following questions in short. **(Any 10)**   20

1) What is JVM (Java Virtual Machine)?

2) What is meaning of automatic type conversion?

3) Write the syntax of the following loops – while, do...while, for loop.

4) Define method overloading.

5) Differentiate between Classes and Interface.

6) What is the meaning of the static keyword?

7) List out the different types of exception.

8) Explain any two string methods

9) Define the term – Exception and Exception Handling.

10) What is event delegation?

11) Explain methods (1) setBackground( ) (2) setForeground( )

12) List down methods for KeyEvent class and ItemEvent class.

Q.3(A)   What is Java? Explain the features of Java in detail.   10

OR

Q.3(A)   List out the decision making and Looping statements available in Java.   10
         Explain with example.

Q.4(A)   Define inheritance. Describe different forms of inheritance.   06

  (B)   Define class. How do classes help us to organize our programs? What are the 04
         three parts of a simple, empty class?

OR

Q.4(A)   Write short note on method overloading and method overriding. (Give   06
         Example)

  (B)   Describe the various forms of implementing interface. Give an example of   04
         JAVA code for each case.

Q.5(A)   Explain Reader stream classes and Writer stream classes.   06

  (B)   What is Arithmetic exception? Explain the syntax of try block and catch block 04
         with an example

OR

Q.5(A)   What is package? What are the benefits of package? Explain Java API   06
         packages.

  (B)   Write a short note on Character Stream classes.   04

Q.6(A)   What is JDBC? List out JDBC components and types of drivers.   05

  (B)   Write a short note on Label and TextField Components. (Give Example)   05

OR

Q.6(A)   Explain Applet life cycle in detail.   05

  (B)   Write a short note on List and CheckBox Components. (Give Example)   05

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SARDAR PATEL UNIVERSITY

M. Sc. I. T. (Integrated) Examination, 5th Semester
Monday, 13th November, 2017
PS05CIIT04: Server-Side Web Programming using ASP .NET

Time: 10:00 AM to 01:00 PM   Total Marks: 70

Q:1   Give answers of following Multiple Choice Questions   **[10]**

[01]   CONSOL Application means _____ base application.

    (A)   CUI-DOS   (B)   GUI-DOS
    (C)   Only DOS   (D)   None of these

[02]   The extension of Global file is _____

    (A)   .aspx   (B)   .asax
    (C)   .gspx   (D)   None of these

[03]   To make multiline textbox, _____ property is used.

    (A)   Wrap   (B)   Text
    (C)   TextMode   (D)   Multiline

[04]   The SelectionMode is the property of _____

    (A)   ListBox   (B)   DropdownList
    (C)   TextBox   (D)   None of these

[05]   _____ is disconnected, in-memory representation of data.

    (A)   DataReader   (B)   DataSet
    (C)   DataAdapter   (D)   DataCommand

[06]   DataSet changes are saved to the database using the:

    (A)   Save method   (B)   Fill method
    (C)   Update method   (D)   None of these

[07]   A cookie can have a maximum size of _____ KB.

    (A)   4   (B)   5
    (C)   14   (D)   None of these

[08]   What is the extension of the file, when LINQ to SQL is used?

    (A)   .dbml   (B)   .dbxml
    (C)   .dbHtml   (D)   None of these

[09]   In _____ statement the LINQ query is executed.

    (A)   ForNext   (B)   ForEach
    (C)   ForItem   (D)   None of these

[10]   LINQ query expressions must end with _____ clause.

    (A)   Start   (B)   Select
    (C)   From   (D)   None of these

P. T. O.

Q:2 **Answer the following short questions (any Seven)** [20]

[01] List the stages of ASP .NET life cycle.

[02] What is variable? How it is declared in C#?

[03] What is Console Application? List the methods for read and write data.

[04] List different types of Validation controls.

[05] Write down short note on Master Page.

[06] What is the use of AdRotator control?

[07] Define Session state.

[08] What is difference between DataSet and DataReader?

[09] List the components of ADO .Net. Explain in brief any one of them.

[10] What are the basic steps of LINQ query execution?

[11] Explain PasswordRecovery control.

[12] What is LINQ?

Q:3 [A] Explain the events of ASP .NET page life cycle. [05]

[B] Explain the coding models of ASP .NET. [05]

OR

[C] Explain .NET Framework in detail [10]

Q:4 [A] Explain Calender control with properties, methods and events with example. [05]

[B] Explain Radio Button control with properties, methods and events with example. [05]

OR

[C] Explain any two validation control in detail. [05]

[D] Explain ListBox control with properties, methods and events with example. [05]

Q:5 [A] Explain the connected architecture of ADO.NET in brief. [05]

[B] What is state Management? Explain any one server side state management. [05]

OR

[C] Describe the disconnected architecture of ADO.NET's data access model. [05]

[D] Explain QueryString in detail with advantages and disadvantages. [05]

Q:6 [A] Explain Client-Side Architecture of Ajax in ASP .NET in detail. [05]

[B] Explain Timer control in detail. [05]

OR

[C] Explain LINQ to Dataset in detail. [05]

[D] Explain in detail Advantages and disadvantages of AJAX. [05]

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SARDAR PATEL UNIVERSITY

M. Sc. IT (Integrated)

Vth - SEMESTER UNDER (CBCS)

PS05EIIT01 : Multimedia Technology

Date : 15/11/2017 Wednesday   Time : 10:00 AM to 12:00 NOON   Max Marks : 70

Q.1   Write answers of following Multiple Choice Questions :   [10]

[01]   In 10X CD-ROM drive, X indicates _____.
    (A)   Space   (B)   Capacity
    (C)   Data Transfer Rate   (D)   Size

[02]   VGA to TV Adapter Cards convert _____ signal into _____ signal.
    (A)   Television, Computer   (B)   Computer, Digital
    (C)   Computer, Television   (D)   Digital, Analog

[03]   The _____ technology engages variety of multimedia including audio, video, graphics, text and animation.
    (A)   Entertainment   (B)   Multiple Media
    (C)   Multimedia   (D)   None of these

[04]   The _____ allows you to connect your microphone to your sound card for voice or instrument recording.
    (A)   Speaker out Jack   (B)   Microphone in Jack
    (C)   Line in Jack   (D)   Line out Jack

[05]   The process of removing blank space is called _____.
    (A)   Splicing   (B)   Trimming
    (C)   Volume control   (D)   None of these

[06]   In India _____ is the broadcast video standard is used.
    (A)   NTSC   (B)   PAL
    (C)   NTFS   (D)   SAT

[07]   Television handles video as _____ signals, and the computer handles them as _____ signals.
    (A)   Digital, Analog   (B)   Analog, Digital
    (C)   Frequency, Data   (D)   Analog, Wave

[08]   The movement of objects measures from one stage to another is related to _____.
    (A)   Keyframes   (B)   Frames
    (C)   Slots   (D)   None of these

[09]   Which of the following is not type of authoring tools?
    (A)   Time based   (B)   Frame based
    (C)   Icon based   (D)   Layer based

[10]   The process of assembling or integrating different types of media is known as _____.
    (A)   Multimedia Editing   (B)   Multimedia Authoring
    (C)   Multimedia Project   (D)   Multimedia Programming

P. T. O.

Q.2 Answer the following short questions : Attempt Any Ten   [20]
     [01] What is Multimedia?
     [02] Define : Sound Card.
     [03] What is the use of MIDI Interface Card?
     [04] What is Audio Sampling Rate?
     [05] What is Audio Synthesis Technology?
     [06] List popular Digital Audio File Formats.
     [07] What is Rendering?
     [08] What is a need of Lighting in Video Production?
     [09] What is difference between Linking and Embedding?
     [10] What is Multimedia Project?
     [11] List various stages of Project Development.
     [12] List various criteria for selecting right Authoring Tools.

Q.3 [A] Explain Multimedia Application Software. Explain various categories of   [10]
          Multimedia Application.

                                    OR

Q.3 [B] Explain Device Driver in detail. Write use of Add-on Cards or Peripheral [10]
          Cards at user and professional level.

Q.4 [A] Explain Audio Editing Terminologies.   [06]
     [B] Explain needs of Digital Audio Editing.   [04]

                                    OR

Q.4 [C] Explain Special Effect that can be applied on Multimedia Texts.   [06]
     [D] Explain Parameters that control Color Monitors.   [04]

Q.5 [A] Explain concept of 2D Animation in detail.   [05]
     [B] Explain Video Capture Process in detail.   [05]

                                    OR

Q.5 [C] Explain Concept of 3D Animation in detail.   [05]
     [D] Explain Video Post Production.   [05]

Q.6 [A] Explain Characteristics of Authoring Tools.   [05]
     [B] Explain Project Conceptualization.   [05]

                                    OR

Q.6 [C] Explain Navigation Map.   [05]
     [D] Write note on Data Gathering.   [05]

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[25 f A-3]

SARDAR PATEL UNIVERSITY
M.Sc.IT (Integrated) EXAMINATION, SEMESTER V
Thursday, 2nd November, 2017
10:00 a.m. to 1:00 p.m.
PS05FIIT01 – Operation Research

Maximum Marks: 70

Q-1   **Multiple Choice Question.[Each Question carries one Mark]**   **[10]**

1) In graphical method the restriction on number of constraint is _____.
   [a] 2   [b] 3   [c] not more than 3   [d] none of the above

2) In graphical representation the bounded region is known as _____ region.
   [a] Solution   [b] feasible solution   [c] basic solution   [d] optimal

3) The solution to LPP give below is _____
   $Max\ Z = 30x_1 - 15x_2\ subject\ to\ 2x_1 - 2x_2 \leq 2,\ -2x_1 + 2x_2 \leq 2\ where\ x_1, x_2 \geq 0$
   [a] Unbounded solution   [b] Max Z = 30
   [c] Max Z = 15   [d] Infeasible solution

4) In the simplex method for solving of LPP number of variables can be _____ .
   [a] Not more than three   [b] at least three   [c] at least two   [a] none of them

5) The _____ variable is added to the constraint of less than equal to type.
   [a] slack   [b] Surplus   [c] artificial   [d] basic

6). From the following methods _____ is a method to obtain initial solution to Transportation Problem.
   [a] North-West   [b] Simplex   [c] Hungarian   [d] Newton Raphson

7) North – West corner refers to _____.
   [a] top left corner   [b] top right corner
   [c] both of them   [d] none of them

8) In sequencing the time involved in moving jobs from one machine to another is _____.
   [a] negligible   [b] significant   [c] positive number   [d] none of them

9) ___ Event represents beginning of more than one activities.
   [a] burst   [b] merge   [c] dummy   [d] none of them

10) Activity which starts only after finishing other activity is called _____.
    [a] dummy   [b]Predecessor   [c] successor   [d] none of them

Q-2 **Give Answers for the following:(Any ten)** [20]

1. Define feasible solution
2. Give any four models of operations research.
3. State phases for formulating the operations research problems.
4. What is the condition for optimality in simplex table?
5. Write the standard form of LPP for the following LPP:
   Maximize $Z = 3x_1 + 5x_2$
   Subject to $2x_1 + 3x_2 \leq 4, \quad 3x_1 + 2x_2 \geq 7, \quad x_1, x_2 \geq 0$
6. When is Big M method useful?
7. What is transportation problem?
8. What is feasible solution and non degenerate solution in transportation problem?
9. Give mathematical form of assignment problem.
10. What is dummy activity?
11. Write down any two assumptions used for solving sequencing problem.
12. How will you allocate jobs in a sequence if two jobs on first machine have same processing time?

Q-3 **A)** Write the algorithm to solve LPP using Graphical method for maximization of profit. [5]

B) A person requires at least 10 and 12 units of chemicals A and B respectively, for his garden. A liquid product contains 5 and 2 units of A and B respectively per bottle. A dry product contains 1 and 4 units of A and B respectively per box. If the liquid product sales for Rs. 30 per bottle, dry product sales for Rs. 40 per box. How many of each should be purchased in order to minimize the cost and meet the requirements? Formulate the L.P.P. [5]

OR

Q-3 **A)** Solve the following LPP by graphical method. [5]

Maximize $z = 5x_1 + 7x_2$
Subject to $x_1 + x_2 \leq 4,$
$10x_1 + 7x_2 \leq 35,$
$x_1, x_2 \geq 0.$

B) A carpenter produces two products chairs and tables. Processing of these products is done on two machines A and B. Chair requires 2 hours on machine A and 6 hours on machine B. A table requires 5 hours on machine A and no hours on machine There are 16 hours of time per day available on machine A and 30 hours on machine B. Assuming that the profit per chair is Rs. 20 and Rs. 35 for table. Formulate the problem as LPP in order to determine the number of chairs and tables to be produced so as to maximize the profit. [5]

Q -4 **A)** Maximize $Z = 3x_1 + 2x_2$ [5]
Subject to $2x_1 + x_2 \leq 5$, $x_1 + x_2 \leq 3$, $x_1, x_2 \geq 0$ using simplex method.

B) Maximize $Z = 5x_1 - 2x_2 - x_3$ [5]
Subject to $2x_1 + 2x_2 - x_3 \geq 2$, $3x_1 - 4x_2 \geq 3$, $x_2 + 3x_3 \geq 5$
Where $x_1, x_2, x_3 \geq 0$ using the Big M method.

OR

Q- 4 **A)** Maximize $Z = 7x_1 + 5x_2$ [5]
Subject to $x_1 + 2x_2 \leq 6$, $4x_1 + 3x_2 \leq 12$, $x_1, x_2 \geq 0$ using simplex method.

B) Maximize $Z = 3x_1 - x_2 + 4x_3$ [5]
Subject to $-3x_1 + x_2 + x_3 \geq 2$, $-5x_1 - 2x_2 \leq 3$, $x_1, x_2 \geq 0$ using the Big M method.

Q- 5 **A)** Give the algorithm of VAM to obtain basic feasible initial solution to transportation problem [4]

B)

	A	B	C	D	Supply
I	6	3	5	4	22
II	5	9	2	7	15
III	5	7	8	6	8
Demand	7	12	17	9	

Obtain the initial solution to beside TP using least cost method. [6]

OR

Q -5 **A)**

	A	B	C	D	Supply
I	1	5	3	3	34
II	3	3	1	2	15
III	0	2	2	3	12
IV	2	7	2	4	19
Demand	21	25	17	17	

Obtain the initial solution to beside TP using north west corner method. [6]

B) Find the assignment of salesmen to various districts which will result minimum cost. [4]

Salesman	District			
	1	2	3	4
A	16	10	14	11
B	14	11	15	15
C	15	15	13	12
D	13	12	14	15

Q-6 A) In a machine shop 6 different products are being manufactured each requiring time on two different machines A and B are given in the table below: **[5]**

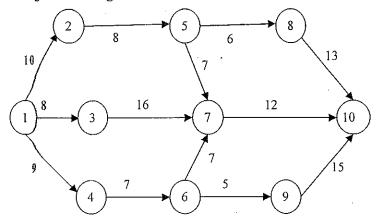| Product	1	2	3	4	5	6
Machine-A	30	120	50	20	90	110
Machine B	80	100	90	60	30	80

Find an optimal sequence of processing of different product in order to minimize the total manufactured time for all product. Find total ideal time for two machines and elapsed time.

B) Find the critical path and calculate the Total float and Free float for the following PERT diagram.   **[5]**

OR

Q-6 A) A project has the following time schedule: **[10]**

Activity	Time In month	Activity	Time In month	Activity	Time In month
1-2	2	3-6	8	6-9	5
1-3	2	3-7	5	7-8	4
1-4	1	4-6	3	7-9	3
2-5	4	5-8	1		

Construct PERT network and compute total float for each activity. Find Critical path with its duration