[60/A-35]
SARDAR PATEL UNIVERSITY
M.Sc. – Information Technology (Integrated)
SEMESTER – IV
PS04CIIT01: Operating Systems - II
Date: 13-04-2017, Thursday   Time: 10:00am to 01:00pm   Max. Marks: 70

Q.1   Multiple choice of Question: 10

1. The _____ register holds the smallest legal physical address.
   a. Base   b. Limit
   c. PTBR   d. PTLR

2. _____ is a memory buffer used to accommodate a speed differential.
   a. Cache   b. Register
   c. Relocation register d. Stub

3. MMU stands for _____.
   a. Memory Management Unit
   b. Multiprogramming Management Unit
   c. Multiple Memory Unit
   d. Memory Mapping Unit

4. Virtual address space includes holes known as _____.
   a. Parse   b. Sparse
   c. Spare   d. Heap

5. _____ swaps page only when needed.
   a. Pager   b. MMU
   c. Lazy swapper   d. scheduler

6. If the reference bit is set to _____ the page is given second chance.
   a. 1   b. 0
   c. NULL   d. Not Set

7. _____ is used to hold frequently used data.
   a. Bus   b. Cache
   c. ROM   d. RAM

8. _____ is used to organize file.
   a. Boot block   b. FCB
   c. Directory structure d. Volume control block

9. Methods used to control I/O devices are called _____.
   a. Kernel   b. I/O subsystem
   c. shell   d. system

10. SCSI Stands for _____.
    a. Small Computer System Interface.
    b. Small Computer System Interconnection.
    c. Small Computer small interface.
    d. Small computer smart interface.

SARDAR PATEL UNIVERSITY
External Examination (CBCS)
M. Sc. - Information Technology (Integrated)
IVth Semester (CBCS)
PS04CIIT02 - Data Communication & Networking
17th April, Monday - 2017

Time : 10:00 am to 1:00 pm

Total Marks :70

Q-1   Select an appropriate option.

10

1. "Interconnected collection of autonomous computers" is known as _____.
    (a) Computer Network   (b) Host   (c) Subnet   (d) Server

2. Number of data elements sent from one device to another per second is known as _____.
    (a) Bandwidth   (b) Modulation Rate   (c) Date Rate   (d) None of these

3. A computer network permits sharing of _____.
    (a) Resources   (b) Information   (c) Both (a) & (b)   (d) None of these

4. Which of the following modulation requires the lowest bandwidth?
    (a) ASK   (b) PSK   (c) FSK   (d) QPSK

5. Transmission media are usually categorized as _____.
    (a) Fixed or Unfixed   (b) Guided or Unguided
    (c) Determinate or Indeterminate   (d) Metallic or Nonmetallic

6. The _____ layer lies between the network layer and the application layer.
    (a) Data link   (b) Physical   (c) Transport   (d) None of these

7. In Carrier Sense Multiple Access , if the station senses the medium before trying to use it then the chance of collision can be _____.
    (a) Increased   (b) Reduced   (c) Highlighted   (d) Decreased

8. For Carrier Sense Multiple Access/Collision Detection, we need a restriction on the _____.
    (a) Collision Size   (b) Signal Size   (c) Frame Size   (d) Station Size

9. The path that a satellite makes around the world is called _____.
    (a) An orbit   (b) A period   (c) A footprint   (d) An uplink

10. _____ is an example of circuit switching .
    (a) Wireless   (b) Telephone network
    (c) Computer-to-Computer   (d) Terminal-to-Computer

Q-2 Answer the following questions. (Attempt any **TEN**)   20

1. Define Computer Networks.
2. Differentiate between Broadcasting and Multicasting.
3. Differentiate between Bridge and Repeater.
4. List the Modulation Techniques.
5. List the seven layers of OSI.
6. Write the full form: (i) DNS (ii) SMTP
7. What is IP Datagram?
8. Draw Figure for TCP Header.
9. Write full form of CSMA/CD and CSMA/CA.
10. Write the full form (i) FTP   (ii) HTTP
11. What is satellite? List categories of satellite.
12. What is Physical topology and Logical topology?

Q-3
(a) Discuss the importance of computer networking.   5
(b) What is LAN? List the characteristics of LAN.   5

OR

Q-3
(a) Write short note on fiber optics transmission media.   5
(b) Explain star topology with its advantages and disadvantages.   5

Q-4
(a) What is switching? Explain Packet switching in detail.   5
(b) What do you mean by Multiplexing? Differentiate between TDM and FDM.   5

OR

Q-4
(a) What is switching? Explain Circuit switching in detail.   5
(b) Differentiate between OSI and TCP/IP.   5

Q-5
(a) Write a short note on TCP Segment Header.   5
(b) Write a short note on CSMA/CD.   5

OR

Q-5
(a) Write a short note on IPv4 protocol.   5
(b) Explain TCP Connection Establishment.   5

Q-6 Write short note: (i) Wireless Networks (ii) Microwave Transmission   10

OR

Q-6 Write short note: (i) Geosynchronous satellite (ii) Radio Transmission   10

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SARDAR PATEL UNIVERSITY

M.Sc. INFORMATION TECHNOLOGY (Integrated)

[35/A-16]

Semester - 4

Wednesday, Date: 19th April 2017

Session: Morning   Time : 10:00 A.M. to 1:00 P.M.

Subject Code: PS04CIIT03

Subject Title : Visual Programming Through VB.NET

Total Marks: 70

Q1.   Multiple Choice Questions. (Attempt all)   [10]

1.   The JIT is type of _____.
     A.   Interpreter   C.   Compiler
     B.   Hardware   D.   Circuit

2.   Window in a windows forms application is called _____.
     A.   Form   C.   Page
     B.   Splash Screen   D.   Frame

3.   In VB.Net a variable is declare using _____.
     A.   Var   C.   Namespace
     B.   Class   D.   Dim

4.   Default event of form is _____.
     A.   Load   C.   Unload
     B.   Click   D.   Unclick

5.   Common code for the application is kept in _____.
     A.   Form   C.   Class
     B.   Model   D.   Module

6.   Checkbox can appear as a _____.
     A.   Input box   C.   Message box
     B.   Button   D.   Radio button

7.   Which symbol creates an access key in the text of a menu item ?
     A.   %   C.   &
     B. $ D.   #

8.   Which control display hierarchy of nodes ?
     A.   Label   C.   Multiline Textbox
     B.   Scrollbar   D.   Tree

9.   _____ method of command object is used with aggregate functions.
     A.   ExecuteReader()   C.   ExecuteNonQuery()
     B.   ExecuteXmlReader()   D.   ExecuteScalar()

10. DataSets are loaded from the database using the _____ method.
     A.   Read   C.   Store
     B.   Fill   D.   Write

Q2. <u>Answer the following short questions (Attempt any TEN)</u>

[20]

1. List the types of project.
2. Define Boxing.
3. Explain CLR in brief.
4. Define the terms : i) property ii) method.
5. List any five events supported by Windows Form.
6. Differentiate between : Messagebox – Inputbox
7. Explain use of Timer control.
8. Explain use of picturebox control.
9. Differentiate between label and linklabel.
10. State the use of Connection object?
11. What is Dataset object?
12. Mention different types of data providers available in ADO.NET Framework.

Q3. Explain .NET Architecture in detail with diagram. [10]

OR

Q3. Explain IDE in detail with diagram in detail. [10]

Q4.a. What is procedure? How the procedures are declared? Explain the ways of [05] passing arguments with example.

b. Explain For...Next in detail with example. [05]

OR

Q4.a. Explain Form life cycle in detail. [05]

b. What is MDI form? Explain how it differs from normal form in details? Which [05] property has to be set to make a form of the MDI parent form?

Q5.a. Explain how Exceptions are handled in detail with example. [05]

b. Explain textbox and button controls in detail. [05]

OR

Q5.a. Write down the steps to add menu on the form. Explain any four properties of it. [05]

b. Explain listbox and combobox controls in detail. [05]

Q6.a. State and explain the four common SQL commands used to retrieve and modify [05] data in a SQL Database.

b. Explain the steps to bind the application with the Database in ADO.NET [05]

OR

Q6.a. Explain methods of Command object in detail. [05]

b. Explain the connected architecture of ADO.NET in brief. [05]

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SARDAR PATEL UNIVERSITY
M.Sc.IT (Integrated) Examination, 4ᵗʰ Semester
Friday, 21ˢᵗ April, 2017.
Time: 10:00 A.M to 01:00 P.M
Subject Code: PS04CIIT04
Subject: Relational Database Management System-II

Total Marks: 70

Q.1   Multiple Choice Questions   [10]

1.   A relation is said to be in BCNF when
   (a)   it has overlapping composite keys
   (b)   it has no composite keys
   (c)   it has no multi-valued dependencies
   (d)   it has no overlapping composite keys which have related attributes

2.   The process of normalization
   (a) is automatic using a computer program.
   (b) requires one to understand dependency between attributes.
   (c) is manual and requires semantic information.
   (d) is finding the key of a relation.

3.   In which control structure, no need to declare to memory variable?
   (a) if   (b) while   (c) for   (d) None of these

4.   A _____ marks a sequence of statements that has to be repeated.
   (a) End   (b) Loop   (c) Continue   (d) goto

5.   A _____ is Execute automatically when an associated DML statement is executed.
   (a) procedure (b) function   (c) trigger   (d) replace

6.   A _____ can must have return statement.
   (a) Function   (b) procedure   (c) trigger   (d) none of this

7.   A _____ is an oracle object, which holds other objects in it.
   (a)   trigger   (b) procedure (c) function   (d) package

8.   Fetch statement retrieves_____rows at a time.
   (a) one   (b) two   (c) three   (d) more than three

9.   Which of the following is not a cursor attribute?
   (a)   %rowtype (b) %found (c) %rowcount (d) %isopen

10.   _____ type of parameter used to only send values to stored procedures.
   (a)   IN   (b) OUT   (c) INOUT   (d) none of above

Q.2   Short Questions (Any Ten)   [20]
                1. What is Trigger? List types of trigger.
                2. List out the parameter of Procedure.
                3. What is Transitive Dependencies explain with Example.
                4. List out the consequences of poor database design.
                5. Explain SELECT..INTO statement available in PL/SQL.
                6. What is Package?List parts of Package.
                7. What is the need of normalization?
                8. Define: %type and %rowtype.
                9. Explain Case statement in brief.
                10. Define Variable and Constant.
                11. Explain the use of EXIT WHEN in brief
                12. List Explicit/Implicit cursor attributes.

Q.3   a)   What is Normalization? Explain 1st normal form with example.   [05]
       b)   Explain BCNF in detail?   [05]

OR

Q.3   a)   What is Normalization? Explain 2nd normal form.,with Example.   [05]
       b)   Explain 3rd Normal with suitable example.   [05]

Q.4   Explain Control Structure in detail.   [10]

OR

Q.4   Explain PL/SQL block with taking one example. How to declare variable and   [10]
             access value of the variable from user. Explain with appropriate syntax and
             example. And how to print user defined message on to the screen.

Q.5   a)   List and explain explicit cursor attributed with suitable example.   [05]
       b)   Explain following statements for explicit cursors :   [05]
             (a)open b) fetch.

OR

Q.5   a)   Explain raise_application_error with syntax and example.   [05]
       b)   Explain Cursor For Loop with example.   [05]

Q.6   a)   Explain Procedure with syntax and example.   [05]
       b)   Explain Trigger with syntax and example.   [05]

OR

Q.6   a)   Explain Function with syntax and example.   [05]
       b)   Explain different parameter used in procedure with example.   [05]

All the Best

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C1(A-5)   **SARDAR PATEL UNIVERSITY**
M.Sc. Information Technology (Integrated)
SEMESTER-IV
External Examination – April 2017
PS04EIIT01 – Cyber Security
24th April 2017

Time:10:00 A.M. to 12.00 Noon   Marks:70

Q1   **Give answers of following Multiple choice questions**   [8]

1   A _____ E-mail is one that appears to originate from one source but actually
    has been sent from another source
    A   spoofed   B   junk
    C   spam   D   trash

2   When an unauthorized person uses the internet hours paid for by another person
    then it is called_____.
    A   password sniffing   B   internet time theft
    C   illegal access   D   internet time left

3   _____ is a person with a strong interest in computers who enjoys learning
    and experimenting with them.
    A   phreaker   B   cracker
    C   hacker   D   war dialer

4   _____ is a collation of software robots that run autonomously and
    automatically.
    A   ·adware   B   spam
    C   DDos   D   botnet

5   _____ is a full-featured, PDA sized computer running a general purpose
    operating system.
    A   ultramobile pc   B   internet tablet
    C   smartphone   D   PDA

6   A typical mishing attacker uses call termed as_____ or message(SMS)
    known as smishing.
    A   D-Dos   B   vishing
    C   virus   D   phishing

7   _____ is a code injection technique that exploits a security vulnerability
    occurring in the database layer of an application.
    A   MYSQL injection   B · POST injection
    C   SQL injection   D   GET injection

8   _____ is a tool that attempts to make activity on the internet
    untraceable.

    A   covering tracks   B   G-zapper
    C   clickjacking   D   anonymizer

Q2		Do as directed (Any 7)	[14]

Q2   **Do as directed (Any 7)**   [14]

1. What are the different types of cyber criminals?
2. Explain salami attack with example.
3. Explain how stalking works.
4. List any three risks associated with cloud computing environment.
5. Explain the following terms : (a) Dos attack, (b) BlueJacking
6. How to protect from smishing attackes?
7. Explain registry settings for mobile devices.
8. List out advantages of antikeyloggers.
9. What are the symptoms of DoS attack?

Q3 [A]	Explain credit card fraud in detail		[6]
Q3 [B]	How do we classify cybercrimes? Explain in detail.		[6]
	OR		
Q3 [B]	Explain global co-operation required in fighting against cybercrime.		[6]

Q4 [A]	Explain cyberstalking.		[6]
Q4 [B]	List and explain security measures for computer system.		[6]
	OR		
Q4 [B]	Explain how criminal plan the attack.		[6]

Q5 [A]	What is Bluetooth? List and explain Bluetooth tools and Bluetooth specific security issues.		[6]
Q5 [B]	Explain operating guidelines for implementing mobile device security policies.		[6]
	OR		
Q5 [B]	Explain the factors contribute for outbreaks on mobile devices.		[6]

Q6 [A]	How to protect from Trojan horses and backdoors?		[6]
Q6 [B]	Explain steps to perform SQL injection.		[6]
	OR		
Q6 [B]	What do you mean by phishing? How phishing works?		[6]

X=X=X

SARDAR PATEL UNIVERSITY

M.Sc. IT (Integrated) – IVth SEMESTER (CBCS)

PS04FIIT01 : Computer Based Numerical and Statistical Methods

Date : 11/04/2017   Time : 10:00 AM to 1:00 PM   Max Marks : 70

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

[01]   From the following _____ method is not iterative method.
   (A)   Lagrange's   (B)   False position
   (C)   Bisection   (D)   None of these

[02]   For real root of an equation $x^3 - 2x - 5 = 0$, the root lies between _____.
   (A)   0 and 1   (B)   1 and 2
   (C)   2 and 3   (D)   None of these

[03]   From the following _____ method is the best method to obtain root of equation $f(x) = 0$.
   (A)   False position   (B)   Newton's Raphson
   (C)   Bisection   (D)   None of these

[04]   All the formulae of interpolation are based on the fundamental assumption that the given data can be expressed as a _____.
   (A)   Equation   (B)   Algorithm
   (C)   Polynomial   (D)   Extrapolation

[05]   The y depends on x can be written as _____.
   (A) $f(x\,y)$ (B) $f(y\,x)$
   (C) $f(x)$ or y_x (D)   All of these

[06]   The _____ is called the backward difference operator.
   (A) $\emptyset$ (B) $\cup$
   (C) Δ (D) ∇

[07]   We can find solution of system of linear, algebraic equations using _____.
   (A)   Gauss-Seidel method   (B)   Newton-Raphson method
   (C)   Bisection method   (D)   None of these

[08]   The system of linear equation $AX = B$ can be solved by matrix inversion method only if _____.
   (A) $|A| = 0$ (B) $|A| \neq 0$
   (C) $A \neq 0$ (D)   A is symmetric

[09]   Seasonal variation means the variation occurring within _____.
   (A)   A number of years   (B)   Parts of a month
   (C)   Parts of a year   (D)   Parts of a day

[10]   A time series is a set of data recorded _____.
   (A)   Periodically   (B)   At time or space intervals
   (C)   At successive points of time (D)   All the above

Q:2 Answer the following short questions : Attempt Any Ten [20]

[01] What is Absolute Error?

[02] Write stopping rules to obtain approximate solution for given non-linear equations.

[03] Use the False Position method to obtain approximate solution of the equation $x^3 - 9x + 1 = 0$.

[04] Write algorithm for Backward Difference Table.

[05] What is Extrapolation?

[06] Explain Central Difference Method.

[07] List various Direct and Iterative Methods.

[08] If x lies in the lower half of the table and if $x_{k-1} < x < x_k$, then what is $\frac{dy(x)}{dx}$ and $\frac{d^2y(x)}{dx^2}$?

[09] If x lies in the upper half of the table and if $x = x_k$, then what is $\frac{dy(x)}{dx}$ and $\frac{d^2y(x)}{dx^2}$?

[10] List Utilities of Time Series.

[11] What do you mean by Cyclic Variation?

[12] List Components of Time series.

Q:3 [A] Solve the following example using Bisection Method. [06]
$X^3 - 4X - 9 = 0$ lies between 2.625 and 2.75. Find the root correct to three significant digits.

[B] Explain False Position Method. [04]

OR

Q:3 [C] Solve the following example using Newton Raphson Method. [06]
$X^3 - X - 4 = 0$ Find the root correct to three decimal places.

[D] Write algorithm for Iterative (Successive Approximation) Method. [04]

Q:4 [A] Given the table of values are as follow : [05]

X	2.0	2.25	2.50	2.75	3.0
Y (X)	9.00	10.06	11.25	12.56	14.00

Find Y (2.35) using Newton's Forward Formula.

[B] Given the table of values are as follow : [05]

X	0	1	2	3
Y (X)	0	2	8	27

Find Y (2.5) using Lagranges Method.

OR

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Q:4 [C] Given the table of values are as follow : [05]

X	2.5	3.0	3.5	4.0	4.5
Y (X)	9.75	12.45	15.70	19.52	23.75

Find Y(4.25) using Newton's Backward Formula.

[D] The following table gives the census population of a town for the years [05] 1891 to 1931. Estimate the population for the year 1895 by using an appropriate interpolation formula.

Year : X	1891	1901	1911	1921	1931
Population : Y (in thousands)	46	66	81	93	101

Q:5 [A] Solve the following system of equations using Matrix Inversion [05] Method.

$2X_1 - 2X_2 + 5X_3 = 13$

$2X_1 + 3X_2 + 4X_3 = 20$

$3X_1 - X_2 + 3X_3 = 10$

[B] The Distance(s) covered by a car in a given Time (t) is given in the [05] following table :

Time (Minutes)	10	12	16	17	22
Distance (Km)	12	15	20	22	32

Find the Speed of the car at t = 14 minutes.

OR

Q:5 [C] Explain the Gauss-Seidel Method for solution of system of linear [05] equations.

[D] Given the following table [05]

x	0.50	0.75	1.00	1.25	1.50
$y = f(x)$	0.13	0.42	1.00	1.95	2.35

Find $f'(0.75)$.

Q:6 [A] Obtain the Trend from the Time Series given below by Method of [10] Moving Average of 3 years and 5 years.

PTO

Year	Y	Year	Y
1961	500	1966	560
1962	540	1967	600
1963	550	1968	640
1964	530	1969	620
1965	520	1970	640

OR

Q:6 [B] List Various Forecasting Models. Explain any Three in detail. [10]

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