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(5th Semester)

BACHELOR OF COMPUTER APPLICATION

Paper No : BCA5E1

(Introduction to E-Governance)

Full Marks : 75

Time : 3 hours

(PART : B—DESCRIPTIVE)

(Marks : 50)

*The figures in the margin indicate full marks
for the questions*Answer **all** questions

1. (a) Define e-Governance. Explain in brief the following components of G2G, G2E, G2B, G2C. 5
- (b) Mention the major critical issues in e-Governance applications. 5
- Or*
- (c) What are the major advantages and disadvantages of e-Governance? 5
- (d) What is NeGP? Describe the major components of it. 5

2. (a) What is e-Government Project Development Cycle? Explain in brief the important activities in each phase. 10

Or

- (b) Explain the following : 5+5=10
- (i) Public-private partnership for e-Governance
- (ii) Infrastructure pillars of NeGP

3. (a) Explain the different Mission Mode Projects of NeGP with examples. 5
- (b) Explain the various evolutionary stages in e-Governance. 5

Or

- (c) Mention the business models for e-Government projects. 5
- (d) Mention the overview of Mizoram e-Governance initiatives. 5

4. (a) Write short notes on the following : 5+5=10
- (i) Change management for e-Governance projects
- (ii) Role of leadership in e-Governance projects

Or

- (b) (i) What are the major stages of e-Governance? 5
- (ii) What are the several security drawbacks of an e-Governance mechanism? 5

(3)

5. (a) Explain the following : 5+5=10
(i) Security for e-Governance projects
(ii) Legal reforms for government
business process re-engineering

Or

- (b) Write short notes on : 5+5=10
(i) Enterprise architecture for
e-Governance
(ii) Major tools and techniques required
for government process re-
engineering

Subject Code : V/BCA/5E1

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(5th Semester)

BACHELOR OF COMPUTER APPLICATION

Paper No : BCA5E1

(Introduction to E-Governance)

(PART : A—OBJECTIVE)

(Marks : 25)

The figures in the margin indicate full marks for the questions

SECTION—I

(Marks : 15)

I. Tick (✓) the most correct answer in the brackets provided : 1×10=10

1. The biggest factors of 'digital divide' in e-Governance mainly comprise of

(a) the poor and the rich ()

(b) metro and village ()

(c) the have and the have not in IT ()

(d) citizen and business ()

(2)

2. G2G interaction is mainly achieved by means of

- (a) e-mail ()
- (b) portal ()
- (c) computer ()
- (d) social network ()

3. Pick out the odd one.

- (a) IP4 ()
- (b) One-time password (OTP) ()
- (c) Cryptography ()
- (d) Firewalls ()

4. The software made by Mizoram Government under e-Governance project to monitor excessive indenting of items is

- (a) ENDNET ()
- (b) E-Billing ()
- (c) CM online ()
- (d) Inventory Management System ()

(3)

5. To be successful in e-Government implementation, leaders must
- (a) support the design phase only ()
 - (b) support during the execution phase only ()
 - (c) support during all the phases ()
 - (d) empower the government ()
6. E-Governance challenges specific to Mizoram is lack of
- (a) integrated services ()
 - (b) key persons ()
 - (c) network connectivity ()
 - (d) good government ()
7. The last phase in e-Governance project development lifecycle is
- (a) vision and strategy development ()
 - (b) operate and sustain ()
 - (c) implementation approach ()
 - (d) key challenges and learning ()

(4)

8. The vision of NeGP is to make all government services through

(a) IT adoption ()

(b) secure political support ()

(c) front-end delivery channels ()

(d) accessibility to common man ()

9. National e-Governance Plan (NeGP) initially consists of

(a) 30 Mission Mode Projects (MMPs) ()

(b) 31 Mission Mode Projects (MMPs) ()

(c) 27 Mission Mode Projects (MMPs) ()

(d) 33 Mission Mode Projects (MMPs) ()

10. In which State, NeGP is implemented first in India?

(a) Maharashtra ()

(b) Punjab ()

(c) Assam ()

(d) Himachal Pradesh ()

(5)

II. Put a tick (✓) whether the following statements are *True (T) or False (F)* in the brackets provided : 1×5=5

1. e-Governance is only the translation of government process by using ICT.

(T / F)

2. A group of tasks carried out to reach a (desired) outcome is called process.

(T / F)

3. e-Government Project Development Cycle comprises of ten phases.

(T / F)

4. CSCs will offer online integrated service.

(T / F)

5. Good governance is also called e-Governance.

(T / F)

(6)

SECTION—II

(Marks : 10)

III. Answer the following questions in 1-2 sentence(s)
each : 2×5=10

1. What is government process re-engineering (GPR)?

(7)

2. Define SMART in governance.

3. Define ADKAR for change management.

(8)

4. What is digital divide?

5. What do you mean by mission mode project?

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(5th Semester)

BACHELOR OF COMPUTER APPLICATION

Paper No : BCA-5E2

(**Computer Network Security**)

Full Marks : 75

Time : 3 hours

(PART : B—DESCRIPTIVE)

(Marks : 50)

*The figures in the margin indicate full marks
for the questions*

1. (a) Explain a model of Internetwork Security with diagram. 6
- (b) What is the difference between a denial-of-service attack and a distributed denial-of-service attack? Which is more dangerous? Why? 4

Or

- (c) Describe the six services provided by network security. 6
- (d) Explain how man-in-the-middle attacks work. 4
2. (a) Write notes on AES and DES. 6
- (b) Using transposition cipher, encrypt and decrypt the message "I LOVE YOU" with the following key : 4
Plain text : 2 4 1 3 Ciphertext : 1 2 3 4

Or

- (c) Explain the procedure of Diffie-Hellman cryptosystem. 6
- (d) What are the keys used in cryptography? In what types of cryptography the keys are used? 4
3. (a) What is Kerberos? Explain the principles involving in Kerberos protocol. 6
- (b) What is password? What are the advantages and disadvantages of using long passwords? 4

Or

- (c) Explain the procedure of SHA-1 hash algorithm. 6
- (d) Why is Certification Authority so important in network security? 4

(3)

4. (a) Define IPSec. Explain the two modes of IP Security. 5
- (b) What is VPN? Why do we need to use VPN? 5

Or

- (c) Describe the protocol of SSL (Secure Sockets Layer). 5
- (d) What is firewall? Explain the function of packet filter firewall. 5
5. (a) Why do we need to use IDPS? Explain the different types of intrusion detection and prevention system detection methods. 10

Or

- (b) Explain any *five* of the following : 2×5=10
- (i) Port scanner
 - (ii) Firewall analysis
 - (iii) Operating system detection tools
 - (iv) Vulnerability scanners
 - (v) Packet sniffers
 - (vi) Wireless software

Subject Code : V/BCA/5E2

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(5th Semester)

BACHELOR OF COMPUTER APPLICATION

Paper No : BCA-5E2

(Computer Network Security)

(PART : A—OBJECTIVE)

(Marks : 25)

The figures in the margin indicate full marks for the questions

SECTION—I

(Marks : 15)

- 1.** Tick (✓) the correct answer in the brackets provided :
1×10=10

(a) The use of fraudulent e-mails or instant messages to trick users is called

(i) spoofing ()

(ii) sniffing ()

(iii) phishing ()

(iv) mailbombing ()

(2)

(b) Malicious software that looks like a legitimate software is called

- (i) Virus ()
- (ii) Worm ()
- (iii) Trojan horse ()
- (iv) DOS ()

(c) Digital signature provides

- (i) confidentiality ()
- (ii) integrity ()
- (iii) non-repudiation ()
- (iv) authentication ()

(d) Pretty Good Privacy (PGP) is used in

- (i) browser security ()
- (ii) e-mail security ()
- (iii) FTP security ()
- (iv) None of the above ()

(3)

(e) _____ is a network that allows authorized access from outside users.

- (i) Intranet ()
- (ii) Internet ()
- (iii) Extranet ()
- (iv) None of the above ()

(f) In a/an _____ cipher, the same key is used by both the sender and receiver.

- (i) symmetric key ()
- (ii) asymmetric key ()
- (iii) Either (i) or (ii) ()
- (iv) Neither (i) nor (ii) ()

(g) SHA-1 has a message digest of

- (i) 160 bits ()
- (ii) 512 bits ()
- (iii) 628 bits ()
- (iv) 820 bits ()

(4)

(h) A session symmetric key between two parties is used

(i) only once ()

(ii) twice ()

(iii) multiple times ()

(iv) Depends on situation ()

(i) WPA2 is used for security in

(i) Ethernet ()

(ii) Bluetooth ()

(iii) Wi-Fi ()

(iv) None of the above ()

(j) Which of the following is antivirus program?

(i) Norton ()

(ii) K7 ()

(iii) Quick Heal ()

(iv) All of the above ()

(5)

2. State whether the following statements are *True (T)* or *False (F)* in the brackets provided : $1 \times 5 = 5$

(a) A one-time password makes eavesdropping and stealing useless.

()

(b) In transposition cipher, the locations of characters are changed instead of substitute.

()

(c) SSL was developed by Microsoft.

()

(d) A virus is a malicious code that can survive on its own.

()

(e) A proxy firewall filters at the network layer.

()

(6)

SECTION—II

(Marks : 10)

3. Answer the following questions : 2×5=10

(a) Use the Shift cipher with key = 13 to encrypt the message "VIRUS".

(7)

(b) Differentiate between conventional signature and digital signature.

(8)

(c) What capabilities should a wireless security toolkit include?

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(9)

(d) What are the two categories of cryptography?

(10)

(e) What is the purpose of a firewall?

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(5th Semester)

BACHELOR OF COMPUTER APPLICATION

Paper No : BCA-5E3

(Data Mining and Warehousing)

Full Marks : 75

Time : 3 hours

(PART : B—DESCRIPTIVE)

(Marks : 50)

*The figures in the margin indicate full marks
for the questions*

1. (a) Explain the steps of knowledge discovery in databases. 6
- (b) Discuss about the different issues of data mining. 4
- Or*
- (c) List and discuss the classification of data mining systems. 10

2. (a) Explain web content mining techniques. 10

Or

- (b) What are the characteristics of web data? 4
- (c) Discuss the steps that involved in web log data preprocessing. 6

3. (a) Illustrate the structure and functions of data warehouse. 10

Or

- (b) Explain the host-based data warehouse. 10

4. (a) What is a data warehouse? Discuss the data warehouse architecture with diagram. 2+8=10

Or

- (b) What is metadata? Describe the three categories of metadata. 2+8=10

5. (a) What is STAR schema? What are component tables? 2+8=10

Or

- (b) Describe the composition of the primary keys for the dimension and fact tables. 10

Subject Code : V/BCA/5E3

Booklet No. **A**

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(5th Semester)

BACHELOR OF COMPUTER APPLICATION

Paper No : BCA-5E3

(Data Mining and Warehousing)

(PART : A—OBJECTIVE)

(Marks : 25)

The figures in the margin indicate full marks for the questions

SECTION—I

(Marks : 15)

I. Put a Tick (✓) mark against the correct answer in the brackets provided : 1×10=10

1. A goal of data mining includes which of the following?
 - (a) To explain some observed events or conditions ()
 - (b) To confirm that data exists ()
 - (c) To analyze data for expected relationships ()
 - (d) To create a new data warehouse ()

(2)

2. _____ is described as extracting the information from large amount of data in a database.

(a) Data modeling ()

(b) Data warehousing ()

(c) Data mining ()

(d) None of the above ()

3. Which metadata links business and warehouse terminology and describes the data's technical structure?

(a) Usage metadata ()

(b) Control metadata ()

(c) Operational metadata ()

(d) Build time metadata ()

4. Which of the following is used to examine data collected by search engines and web spiders?

(a) Web structure mining ()

(b) Web content mining ()

(c) Web usage mining ()

(d) None of the above ()

(3)

5. Which of the following is the process of detecting and correcting the wrong data?
- (a) Data selection ()
 - (b) Data cleaning ()
 - (c) Data integration ()
 - (d) None of the above ()
6. The information gathered through web mining is evaluated by using
- (a) clustering ()
 - (b) classification ()
 - (c) association ()
 - (d) All of the above ()
7. Which is an application that modifies the data whenever it retrieved and has large number of simultaneous users?
- (a) OLAP ()
 - (b) OLTP ()
 - (c) ODS ()
 - (d) Fact table ()

(4)

8. High speed, single pass, parallelizable, multitable join is

(a) snowflake ()

(b) star index ()

(c) star join ()

(d) star schema ()

9. Which data design includes determination of the various data elements that are needed and combination of the data elements into structures of data?

(a) Logical ()

(b) Physical ()

(c) Conceptual ()

(d) Operational ()

10. ____ is the process of using graph theory to analyze the node and connection structure of a web site.

(a) Web structure mining ()

(b) Web content mining ()

(c) Web usage mining ()

(d) None of the above ()

(5)

II. State whether the following statements are *True (T)* or *False (F)* by putting a Tick (✓) mark in the brackets provided : 1×5=5

(a) Foreign key is nothing but a substitute for the natural primary key.

(T / F)

(b) Data dictionary contains the information about the project information, graph and server information.

(T / F)

(c) PageRank or PR(A) can be calculated using a simple iterative algorithm and corresponds to the principal eigenvector of the normalized link matrix of the web.

(T / F)

(d) Association is the process of making a group of abstract objects into classes of similar objects.

(T / F)

(e) Data warehouse is the actual discovery phase of a knowledge discovery process.

(T / F)

(6)

SECTION—II

(Marks : 10)

III. Answer the following questions :

2×5=10

1. Define data mining.

(7)

2. What is rule-based filtering?

(8)

3. What are the steps to build the data warehouse?

4. What are the types of data modeling?

(9)

5. List out the functionalities of metadata.

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(5th Semester)

BACHELOR OF COMPUTER APPLICATION

Paper No. : BCA-501 (OC)

(**Networking—II**)

(Old Course)

Full Marks : 75

Time : 3 hours

(PART : B—DESCRIPTIVE)

(Marks : 50)

*The figures in the margin indicate full marks
for the questions*

1. (a) Write the datagram format of IPv4 and explain any four fields. 5
- (b) Describe the three CSMA persistence method by giving a suitable diagram. 5
- Or*
- (c) Explain how CSMA/CD detects collision. Also write the flow diagram for CSMA/CD. 5

- (d) Explain link state routing by giving a suitable example. 5

2. (a) Describe the three-way handshaking method for TCP connection establishment. 6

- (b) Write any two differences and any three similarities between UDP and TCP. 4

Or

- (c) What are the classifications of port number? Write the ranges of each port number. 4

- (d) Explain the three-way handshaking method for TCP connection termination. 6

3. (a) What are the three DNS domain classifications? Explain each by giving examples. 6

- (b) What is HTTP? Write the format of HTTP request and response message. 4

Or

- (c) Explain File Transfer Protocol (FTP) by giving a suitable example. 5

- (d) Explain BOOTP and TFTP. 5

(3)

4. (a) Write a short note on Web security. 5
- (b) Differentiate between synchronous and asynchronous TDM by giving a suitable diagram. 5
- Or*
- (c) Discuss the different layers of ATM. 6
- (d) Write a short note on wireless security. 4
5. (a) Elaborate the three major systems of a GSM network. 6
- (b) Distinguish between soft and hard handoff. 4
- Or*
- (c) Explain the five functional units of a GSM switching system. 5
- (d) What are different GSM networks? Explain by giving a suitable diagram. 5

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(5th Semester)

BACHELOR OF COMPUTER APPLICATION

Paper No. : BCA-501 (OC)

(Networking—II)

(Old Course)

(PART : A—OBJECTIVE)

(Marks : 25)

The figures in the margin indicate full marks for the questions

SECTION—I

(Marks : 15)

A. Tick (✓) the correct answer in the brackets provided :

1×10=10

1. Com and Info belongs to

- (a) country domain ()
- (b) generic domain ()
- (c) inverse domain ()
- (d) FQDN ()

(2)

2. FTP uses the service of

(a) TCP ()

(b) UDP ()

(c) HTTP ()

(d) IP ()

3. ATM is

(a) synchronous mode ()

(b) asynchronous mode ()

(c) virtual mode ()

(d) generic mode ()

4. ATM virtual connection is defined by a pair of numbers

(a) NNI and UNI ()

(b) VPI and VCI ()

(c) AAL1 and AAL2 ()

(d) Port 80 and 81 ()

(3)

5. Which of the following is not among the subscriber services supported by GSM?

(a) Facsimile group III ()

(b) Cell broadcast ()

(c) Voice mail ()

(d) RPC ()

6. VSAT stands for

(a) Very Small Aperture Terminal ()

(b) Virtual Satellite Aperture Terminal ()

(c) Virtual Server Augmented Terminal ()

(d) Very Small Access Terminal ()

7. Which of the following devices is used for connecting more than one LAN?

(a) Hub ()

(b) Bridge ()

(c) Repeater ()

(d) Virtual hub ()

(4)

8. The size of an Ethernet address is

(a) 48 bits ()

(b) 32 bits ()

(c) 128 bits ()

(d) 256 bits ()

9. Logical address is used in

(a) data-link layer ()

(b) network layer ()

(c) transport layer ()

(d) session layer ()

10. RARP stands for

(a) Resolution Address Remote Protocol ()

(b) Remote Address Resolution Protocol ()

(c) Reverse Address Resolution Protocol ()

(d) Revised Address for Router Protocol ()

(5)

B. Indicate *True (T)* or *False (F)* by a Tick (✓) mark :
1×5=5

1. TELNET is a general purpose client/server application program.

(T / F)

2. ATM cells are large in size.

(T / F)

3. GSM switching system is responsible for storage and management of subscription.

(T / F)

4. UDP is connectionless protocol.

(T / F)

5. Size of IPv6 address is 138 bits.

(T / F)

(6)

SECTION—II

(Marks : 10)

C. Answer the following questions :

2×5=10

1. What is URL?

(7)

2. Differentiate between FQDN and PQDN.

(8)

3. Write two differences between ISDN and BISDN.

4. What is frequency reuse principle?

(9)

5. Explain any two ICMP messages.

2017

(5th Semester)

BACHELOR OF COMPUTER APPLICATION

Paper No. : BCA-501

(Introduction to Java Programming)

Full Marks : 75

Time : 3 hours

(PART : B—DESCRIPTIVE)

(Marks : 50)

*The figures in the margin indicate full marks
for the questions*

1. (a) List four basic parts of method declaration. 2
 - (b) Write the differences between Java and C. 3
 - (c) What is token? State and explain different types of token. 5
- Or*
- (d) When to use static member? Write declaration code. 2

- (e) What is visibility control? Explain briefly different types of visibility control. 4
- (f) Write a short note on a Java Virtual Machine. 4

2. (a) What is string? Explain two types of implementing classes of string. 1+2=3
- (b) Write a simple program that demonstrates multi-level package. 3
- (c) Explain with the syntax of the steps involved in creating an array. 4

Or

- (d) Discuss how multiple inheritance is supported by interface with an example. 5
 - (e) What is interface? Write the general form of an interface definition. 1+1=2
 - (f) What are the differences between 'class' and 'interface'? 3
3. (a) What is an exception? Explain briefly two types of exception. What are their differences? 2+2+1=5
 - (b) What is error? State and discuss two types of error. 5

(3)

Or

- (c) Define synchronization. When we declare synchronization, how does it work? 3+3=6
- (d) What are the differences between multithreading and multitasking? 4
4. (a) What could be the problems when opening a file which is not created? 2
- (b) List six operations that can be performed by file class. 3
- (c) What are character stream classes? Discuss briefly two types of character stream class. 5

Or

- (d) What is the use of iterator? Discuss with an example. 4
- (e) What is the usage of collection interface? 3
- (f) Differentiate between List and Set. 3
5. (a) How do applets differ from application? 2
- (b) State the steps involved in developing and testing in applets. 3
- (c) Describe various stages in the life circle of applet. 5

(4)

Or

- (d) What are layout managers? What are the basic functionalities of layout managers? 5
- (e) Write the importances of Label, Button and text-box control. 3
- (f) Write a program that demonstrates the use of scroll bar. 2

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(5th Semester)

BACHELOR OF COMPUTER APPLICATION

Paper No. : BCA-501

(Introduction to Java Programming)

(PART : A—OBJECTIVE)

(Marks : 25)

The figures in the margin indicate full marks for the questions

SECTION—I

(Marks : 15)

- 1.** Tick (✓) the correct answer in the brackets provided :
1×10=10

(a) Which of the following methods is the starting point for all Java Programs?

(i) statec ()

(ii) void ()

(iii) main ()

(iv) args ()

(2)

(b) Vectors, hash tables and dates belong to which package?

(i) java.applet ()

(ii) java.util ()

(iii) java.awt ()

(iv) java.net ()

(c) The compile error occurs when

(i) divide by zero ()

(ii) to use -ve size of array ()

(iii) an array's bout of bound ()

(iv) setting wrong path ()

(d) Which of the following is used for handling i/o operation on bytes?

(i) Writer stream ()

(ii) Byte stream ()

(iii) Character stream ()

(iv) Read stream ()

(3)

(e) When applet will not able to run, which one of the following executable files is missing?

(i) .awt ()

(ii) .applet ()

(iii) .javac ()

(iv) .class ()

(f) The output of the following code is

```
int X = 14;  
system.out.println ( X );
```

(i) 13 ()

(ii) 14 ()

(iii) 15 ()

(iv) 16 ()

(g) Which of the following enables Java to support multiple inheritance?

(i) Implements ()

(ii) Interface ()

(iii) Packages ()

(iv) Final ()

(4)

(h) Which of the following states is not included in applet life circle?

(i) Born state ()

(ii) Stopped state ()

(iii) Destroyed state ()

(iv) Pause state ()

(i) Which of the following is not required to run thread?

(i) thread object ()

(ii) implements ()

(iii) run() method ()

(iv) start() method ()

(j) Which of the following algorithms enables us to arrange the elements of list in a certain order?

(i) Shuffle algorithm ()

(ii) Sort algorithm ()

(iii) Manipulating algorithm ()

(iv) Search algorithm ()

(5)

2. Indicate *True (T)* or *False (F)* by a Tick (✓) mark :
1×5=5

(a) Classes can be accessed in the package without public declaration.

(T / F)

(b) Single-line comment is created by `-//` characters at the end of line.

(T / F)

(c) Vector can hold object of any type.

(T / F)

(d) `resume()` method is invoked in the case of suspend.

(T / F)

(e) The code below will run applet
– `CODE = appletname.java.`

(T / F)

(6)

SECTION—II

(Marks : 10)

3. Answer the following questions :

2×5=10

(a) Define package.

(7)

(b) Write the advantages of Java over to other languages.

(8)

(c) Differentiate between input stream and reader stream.

(d) What is the job of paint() in applet?

(9)

- (e) How exception handling mechanism can be used for debugging a program?

2 0 1 7

(5th Semester)

BACHELOR OF COMPUTER APPLICATION

Paper No. : BCA-501P

(Java Programming)

(Practical)

Full Marks : 75

Time : 3 hours

*The figures in the margin indicate full marks
for the questions*

SECTION—A

Answer *any two* questions

1. Write a program to demonstrate constructors and constructor overloading. 15
2. Write a program to implement the methods of string class. 15
3. Write a program to demonstrate the exceptions. 15

SECTION—B

Answer *any one* question

4. Write a program to demonstrate the creation of a frame. 20
5. Write a program to demonstrate scroll bars with proper events. 20

SECTION—C

6. Viva voce 15
7. Practical record book 10

2 0 1 7

(5th Semester)

BACHELOR OF COMPUTER APPLICATION

Paper No. : BCA-502 (OC)

(Database Management System)

(Old Course)

Full Marks : 75

Time : 3 hours

(PART : B—DESCRIPTIVE)

(Marks : 50)

*The figures in the margin indicate full marks
for the questions*

1. (a) Define DBMS. Write the advantages of DBMS in detail. 6
- (b) What are aggregate functions? Give examples. 4

Or

- (c) Explain the three-schema architecture and data independence with a neat diagram. 10

2. (a) Describe the types of recovery techniques. 10

Or

- (b) Explain different types of database user. 5
- (c) Explain the types of integrity constraints. 5

3. (a) What do you understand by specialization in EER modeling? Explain with an example. 6

- (b) Discuss different ways by which join operation can be modeled using SQL. 4

Or

- (c) What are the different causes of failure of data in a database system? 5

- (d) Discuss how roles and privileges are revoked from users. 5

4. (a) What is database normalization? Explain any three types of normalization with examples. 2+8=10

(3)

Or

- (b) What are the logical operators available in SQL? Give examples. 5
- (c) Explain the use of parallel queries with an example. 5
5. (a) Explain the various binary operations in relational algebra with examples of each. 10

Or

- (b) Write SQL statements for the following : 6
- (i) Create a table named student with the following fields :
Stu_no, Name, Address,
Semester, Grade
- (ii) Create a view named Stu_grade with the following fields :
Stu_no, Name, Grade
- (iii) Find the names of all students who are currently in 'II semester' and whose grade is 'A'.
- (c) Draw the notations used for E-R diagram. 4

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Subject Code : V/BCA/502 (OC)

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(5th Semester)

BACHELOR OF COMPUTER APPLICATION

Paper No. : BCA-502 (OC)

(Database Management System)

(Old Course)

(PART : A—OBJECTIVE)

(Marks : 25)

The figures in the margin indicate full marks for the questions

SECTION—I

(Marks : 15)

I. Tick (✓) the correct answer in the brackets provided :

1×10=10

1. Which of the following is not a characteristic of data in a database?

(a) Security ()

(b) Data catalog ()

(c) Consistency ()

(d) Non-redundancy ()

(2)

2. The _____ database level is closest to the users.
- (a) external ()
 - (b) internal ()
 - (c) physical ()
 - (d) conceptual ()
3. An entity type which has no key is called a
- (a) composite entity type ()
 - (b) weak entity type ()
 - (c) stored entity type ()
 - (d) null value ()
4. _____ is based on the concept of full functional dependency.
- (a) 1NF ()
 - (b) 2NF ()
 - (c) 3NF ()
 - (d) BCNF ()

(3)

5. Which of the following is a DDL statement?

(a) Update ()

(b) Delete ()

(c) Commit ()

(d) Alter ()

6. All aggregate functions except _____ ignore null values in their input collection.

(a) count (attribute) ()

(b) count (*) ()

(c) avg ()

(d) sum ()

7. The term _____ is used to refer to a row.

(a) attribute ()

(b) tuple ()

(c) field ()

(d) instance ()

(4)

8. The primary key must be
- (a) non-null ()
 - (b) unique ()
 - (c) Both (a) and (b) ()
 - (d) nul ()
9. Which of the following is not a recovery technique?
- (a) Deferred update ()
 - (b) Immediate update ()
 - (c) Two-phase commit ()
 - (d) None of the above ()
10. In log-based recovery, the log is sequence of
- (a) filters ()
 - (b) records ()
 - (c) blocks ()
 - (d) numbers ()

(5)

II. State whether the following statements are *True (T)*
or *False (F)* : 1×5=5

1. Union does not eliminate duplicate tuples from the result.

()

2. The relational database model was created by E. F. Codd.

()

3. Generalization is a top-down approach.

()

4. A table is in the BCNF if only candidate keys are the determinants.

()

5. Anything that affects the database schema is a part of DDL.

()

(6)

SECTION—II

(Marks : 10)

III. Answer the following questions : 2×5=10

1. What are the characteristics of data in a database?

(7)

2. Write a short note on database backup.

3. What are participation constraints?

(8)

4. What is checkpointing?

(9)

5. Differentiate between weak entity type and strong entity type.

2 0 1 7

(5th Semester)

BACHELOR OF COMPUTER APPLICATION

Paper No. : BCA-502

(Computer Graphics and Multimedia)

Full Marks : 75

Time : 3 hours

(PART : B—DESCRIPTIVE)

(Marks : 50)

*The figures in the margin indicate full marks
for the questions*

1. (a) (i) What is computer graphics? Explain the different applications of computer graphics. 1+5=6
- (ii) Distinguish between Random Scan and Raster Scan monitors. 4
- Or*
- (b) (i) Explain the working mechanism of refresh CRT monitor with a neat diagram. 6

(ii) Differentiate between Beam penetration and Shadow mask in color CRT monitors. 4

2. (a) (i) Explain Cohen-Sutherland Line Clipping Algorithm with suitable diagram. 6
- (ii) Translate a polygon with coordinates $A(2, 5)$, $B(7, 10)$ and $C(10, 2)$ by 3 units in x direction and by 4 units in y direction with a neat diagram. 4

Or

- (b) (i) What is transformation? Explain the following 3D-geometric transformations with suitable diagram : 1+5=6
- (1) Translation
- (2) Scaling
- (ii) What is projection? Explain the different types of projection. 1+3=4

3. (a) What is an ellipse? Write some of the important properties of ellipse. Explain ellipse generating algorithm with suitable diagram. 10

Or

- (b) Explain Bresenham's Line Drawing Algorithm for straight lines of any slope. 10

4. (a) (i) Write notes on the following : 3+3=6
(1) Sphere
(2) Torus
(ii) Differentiate between Superellipse and Superellipsoid. 4

Or

- (b) (i) Define Bezier curve. Explain the properties of Bezier curves. 2+4=6
(ii) What is B-spline curve? Write the advantages of B-spline curves. 4

5. (a) (i) What is animation? Explain the different types of animation. 2+4=6
(ii) Differentiate between JPEG and GIF. 4

Or

- (b) (i) What do you mean by multimedia? Explain the applications of multimedia in education, video conferencing, training and entertainment. 2+4=6
(ii) What is MIDI? Write the advantages and disadvantages of MIDI file. 2+2=4

Subject Code : V/BCA/502

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(5th Semester)

BACHELOR OF COMPUTER APPLICATION

Paper No. : BCA-502

(Computer Graphics and Multimedia)

(PART : A—OBJECTIVE)

(Marks : 25)

The figures in the margin indicate full marks for the questions

SECTION—I

(Marks : 15)

I. Choose the correct answer by putting a Tick (✓) mark
in the brackets provided : 1×10=10

1. The assembly of electron source, accelerator
and focusing system is known as

(a) control grid ()

(b) cathode ()

(c) electron beam ()

(d) electron gun ()

(2)

2. The term 'Computer Graphics' was coined by

(a) Ivan Sutherland ()

(b) William Fetter ()

(c) Bresenham ()

(d) Richter ()

3. The changes in orientation, size and shape are called

(a) translation ()

(b) rotation ()

(c) scaling ()

(d) transformation ()

4. The combination of text, graphics and audio elements into a single collection or presentation is called

(a) hypertext ()

(b) hypermedia ()

(c) multimedia ()

(d) protocol ()

(3)

5. A sound produced by human voice is a good example of

(a) analog data ()

(b) digital data ()

(c) analog signal ()

(d) digital signal ()

6. In polygon clipping, if both vertices are inside the window boundary, the output vertex will be

(a) first vertex ()

(b) second vertex ()

(c) both vertices ()

(d) end vertex ()

7. Which of the following has a single direction and length?

(a) Point ()

(b) Line ()

(c) Vector ()

(d) Line segment ()

(4)

8. _____ is a set of points that are all at a given distance r from a center position.

(a) Circle ()

(b) Sphere ()

(c) Ellipse ()

(d) Ellipsoid ()

9. The individual dots of an image is called

(a) bitmap ()

(b) pixel ()

(c) megapixel ()

(d) digital image ()

10. If the two end-points of the codes of a line are (0001) and (0010), the line is

(a) totally visible ()

(b) partially visible ()

(c) totally invisible ()

(d) transparent ()

(5)

II. State whether the following statements are *True (T)* or *False (F)* by putting a Tick (✓) mark in the brackets provided : 1×5=5

1. Graphics Packages are designed for non-programmers so that users can generate displays without worrying about how graphic operations work.

(T / F)

2. A transformation that distorts the shape of an object is called shear.

(T / F)

3. MIDI file is device independent.

(T / F)

4. The Cartesian slope-intercept equation for a straight line is $y = m x + b$.

(T / F)

5. Ellipsoid is an extension of a spherical surface where the radii can have different values.

(T / F)

(6)

SECTION—II

(Marks : 10)

III. Answer the following questions :

2×5=10

1. Write a short note on plasma panels.

(7)

2. What do you mean by morphing?

3. What are the uses of homogeneous coordinate system?

(8)

4. Write a short note on analog video.

(9)

5. Differentiate between Points and Lines.

2 0 1 7

(5th Semester)

BACHELOR OF COMPUTER APPLICATION

Paper No. : BCA-503 (OC)

(GUI Programming : Visual Basic)

(Old Course)

Full Marks : 75

Time : 3 hours

(PART : B—DESCRIPTIVE)

(Marks : 50)

*The figures in the margin indicate full marks
for the questions*

1. (a) What is a pop-up menu? List out the steps to create a pop-up menu in Visual Basic. 5
- (b) Describe the various mouse events in a form with suitable examples. 5
- Or*
- (c) With a neat diagram, explain file server architecture. 5
- (d) Discuss the different properties in the usage of properties window. 5

2. (a) What is an array? Describe the different types of array with suitable examples. 6
- (b) Explain the various properties of tree view control. 4

Or

- (c) Mention the differences between functions and procedures. 3
- (d) Discuss any five math operations in Visual Basic with examples. 5
- (e) What are the differences between implicit and explicit declarations? 2

3. (a) What is ambient property object? Explain the various properties of ambient property object. 6
- (b) Mention two properties of data grid. 2
- (c) What are the differences between data control and data-bound control? 2

Or

- (d) What are interface wizard and property page wizard? Explain the various steps involved in creating property page using property page wizard. 2+6=8
- (e) List out the uses of EOF property and BOF property. 2

4. (a) Explain how to declare memory variable that will hold ADODB connection and recordset objects with examples. 5
- (b) Describe the method for connecting to a database using ODBC. 5

Or

- (c) What is data report? Explain how to create a report in VB using Microsoft data reports. 8
- (d) Mention the use of source safe projects in Visual Basic. 2
5. (a) List out five each of VBScript statements and functions. Explain their descriptions. 10

Or

- (b) What is ASP? Discuss the different objects in ASP. 6
- (c) Write the syntax of FOR loops control in VB. Also give example. 2
- (d) What is VBScript? Mention the advantages of using VBScript. 2

Subject Code : V/BCA/503 (OC)

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(5th Semester)

BACHELOR OF COMPUTER APPLICATION

Paper No. : BCA-503 (OC)

(GUI Programming : Visual Basic)

(Old Course)

(PART : A—OBJECTIVE)

(Marks : 25)

The figures in the margin indicate full marks for the questions

SECTION—I

(Marks : 15)

I. Tick (✓) the correct answer in the brackets provided :
1×10=10

1. Visual Basic is a tool that allows you to develop application in

- (a) real time ()
- (b) graphical user interface ()
- (c) character user interface ()
- (d) UNIX ()

(2)

2. The variable that does not change the value during execution of program is

(a) numeric ()

(b) string ()

(c) constant ()

(d) float ()

3. The function procedures are _____ by default.

(a) public ()

(b) private ()

(c) protected ()

(d) confidential ()

4. The extension to represent project file is

(a) .frm ()

(b) .vbp ()

(c) .cls ()

(d) .vb ()

(3)

5. The method which loads the form into memory and displays it on the screen is

- (a) load ()
- (b) show ()
- (c) display ()
- (d) Both (b) and (c) ()

6. In Visual Basic, the declaration of variables is done by

- (a) int ()
- (b) dim ()
- (c) static ()
- (d) declare ()

7. _____ is the property used to hide the content in textbox with some symbols.

- (a) Name ()
- (b) Caption ()
- (c) Password char ()
- (d) Variable ()

(4)

8. _____ control is used to represent the items in a hierarchical manner.

(a) Tree view ()

(b) Grid view ()

(c) Progress bar ()

(d) List view ()

9. _____ event occurs when a form is loaded into the memory.

(a) Load ()

(b) Activated ()

(c) Initialize ()

(d) Control ()

10. An object data type can store _____ byte(s).

(a) 1 ()

(b) 2 ()

(c) 4 ()

(d) 8 ()

(5)

II. Tick (✓) whether the following statements are
True or *False* : 1×5=5

1. The Visual Basic Code Editor will automatically detect certain types of errors as you are entering code.

(True / False)

2. A single case statement can contain multiple values.

(True / False)

3. Although a function can return a value, it cannot directly display information in a textbox.

(True / False)

4. MDI stands for menu design interface.

(True / False)

5. The textbox is like a label but it is used to input data into the program.

(True / False)

(6)

SECTION—II

(Marks : 10)

III. Answer the following questions :

2×5=10

1. What are events? Give example.

(7)

2. What are the advantages of the tool bar?

3. Write the full forms of ADODC and ODBC.

(8)

4. What are crystal reports?

(9)

5. What is ActiveX control?

2017

(5th Semester)

BACHELOR OF COMPUTER APPLICATION

Paper No. : BCA-503

(**Microprocessors**)

Full Marks : 75

Time : 3 hours

(PART : B—DESCRIPTIVE)

(Marks : 50)

*The figures in the margin indicate full marks
for the questions*

1. (a) (i) What is a microprocessor? Describe the different categories in which the various functions performed by the micro-processor can be classified. 1+6=7
- (ii) What are flash memory and EE-PROM? 3

Or

- (b) (i) What are the different registers available in 8085 architecture? Explain program counter and stack pointer in brief. 5
- (ii) Explain the bus structure of 8085 with the help of a neat block diagram. 5
2. (a) (i) Make a list of different branch instructions supported by 8085 and briefly explain each of them. 7
- (ii) Explain in brief the different addressing modes of 8085. 3

Or

- (b) (i) What are subroutines? How are they implemented in 8085? 5
- (ii) What do you understand by loops? Explain the different categories of loops. 5
3. (a) (i) What are counters and time delays? 3
- (ii) Describe the design of time delay using one register. 5
- (iii) How is a tristate buffer different from an ordinary buffer? 2

(3)

Or

- (b) (i) What is a latch? What are its uses? 2
(ii) What is a decoder? Explain how it works. 5
(iii) Write a short note on tristate devices. 3
4. (a) (i) Differentiate the following : $2 \times 2 = 4$
(1) Maskable and Non-maskable interrupts
(2) Vectored and Non-vectored interrupts
(ii) Write a note on RST instructions. 6
- Or
- (b) (i) Write a note on DMA. 5
(ii) What do you understand by hardware interrupts? Bring out the differences between RST 7.5, RST 6.5 and RST 5.5. 5
5. (a) (i) Explain the working of successive approximation A/D converter. 5
(ii) What is the difference between digital to analog (D/A) converter and analog to digital (A/D) converter? What are their functions? $2 + 3 = 5$

(4)

Or

- (b) (i) Write a note on R/2R ladder networks. 5
(ii) How do you interface an 8-bit A/D converter using status check? 5

Subject Code : V/BCA/503

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BACHELOR OF COMPUTER APPLICATION

Paper No. : BCA-503

(Microprocessors)

(PART : A—OBJECTIVE)

(Marks : 25)

The figures in the margin indicate full marks for the questions

SECTION—I

(Marks : 15)

I. Choose the correct answer by putting a Tick (✓) mark
in the brackets provided : 1×10=10

1. In each instruction cycle, the first operation is
always

(a) memory read ()

(b) opcode fetch ()

(c) memory write ()

(d) chip select ()

(2)

2. The address bus of 8085 is
- (a) multidirectional ()
 - (b) bidirectional ()
 - (c) unidirectional ()
 - (d) None of the above ()
3. The _____ DAC internally converts the current signal into the voltage signal.
- (a) voltage output ()
 - (b) current output ()
 - (c) multiplying type ()
 - (d) All of the above ()
4. Each microprocessor recognizes and processes a group of bits called
- (a) byte ()
 - (b) instruction ()
 - (c) RAM ()
 - (d) word ()

(3)

5. _____ can serve as input devices and _____ can serve as output devices to microprocessor-based system.

(a) A/D converters, D/A converters ()

(b) D/A converters, A/D converters ()

(c) DMA, ALU ()

(d) None of the above ()

6. _____ is a non-vectored interrupt.

(a) RST 7.5 ()

(b) INTR ()

(c) RST 1 ()

(d) TRAP ()

7. The 8085 has 246-bit pattern amounting to _____ different instructions for performing various operations.

(a) 70 ()

(b) 71 ()

(c) 72 ()

(d) 74 ()

(4)

8. The _____ is an 8-bit register that is part of the Arithmetic Logic Unit (ALU).

(a) stack pointer ()

(b) accumulator ()

(c) program counter ()

(d) general purpose register ()

9. The 8085 has _____ RST instructions that are equivalent to 1-byte calls to specific locations on memory page 00H.

(a) 3 ()

(b) 6 ()

(c) 8 ()

(d) 9 ()

10. _____ is a 1-byte instruction which adds the contents of a general purpose register to the contents of the accumulator.

(a) ADI ()

(b) ADD ()

(c) INR ()

(d) DCR ()

(5)

II. State whether the following statements are *True (T)* or *False (F)* by putting a Tick (✓) mark in the brackets provided : 1×5=5

1. D/A converters are classified into three categories according to their output functions; current, voltage and multiplying.

(T / F)

2. TRAP is a maskable interrupt.

(T / F)

3. The beginning of the stack is defined in the program by using the instruction LXI SP.

(T / F)

4. A time delay can be designed using a register pair.

(T / F)

5. If the result of an arithmetic or logical operation has an odd number of 1s, the parity flag is set.

(T / F)

(6)

SECTION—II

(Marks : 10)

III. Answer the following questions :

2×5=10

1. Define instruction cycle.

(7)

2. What are the different logic operations available in 8085?

3. What is an encoder? Give an example.

(8)

4. Among the interrupts of 8085, which interrupts have the highest priority and the lowest priority respectively?

(9)

5. What do you understand by resolution of a converter?

2 0 1 7

(5th Semester)

BACHELOR OF COMPUTER APPLICATION

Paper No. : BCA-503P

(**Assembly Language Programming**)

(**Practical**)

Full Marks : 75

Time : 3 hours

*The figures in the margin indicate full marks
for the questions*

SECTION—A

Answer *any two* questions

1. Write an Assembly Language Program to divide two 8-bit nos. 15
2. Write an Assembly Language Program to find 2's complement of a given number. 15
3. Write an Assembly Language Program to add 2 nos in memory. 15

SECTION—B

Answer *any one* question

4. Write an Assembly Language Program to find the no of 1's in the given byte. 20
5. Write an Assembly Language Program to add two hexadecimal numbers with carry. 20

SECTION—C

6. Viva voce 15
7. Practical record book 10

2 0 1 7

(5th Semester)

BACHELOR OF COMPUTER APPLICATION

Paper No : BCA-504 (OC)

(**Software Engineering**)

(Old Course)

Full Marks : 75

Time : 3 hours

(PART : B—DESCRIPTIVE)

(Marks : 50)

*The figures in the margin indicate full marks
for the questions*

1. (a) Define software process. What are the fundamental activities of a software process? 5
- (b) What is the advantage of using prototype software development model instead of waterfall model? 5

Or

- (c) Why is the analysis stage of software engineering considered so important? What approaches can be taken to ensure it is successful? 5
- (d) What do you understand by the term 'software crisis'? Explain the causes of present software crisis. 5

2. (a) Discuss in detail the COCOMO model and its phase-wise effort distribution. 4

- (b) Explain any *two* from the following : 3×2=6

- (i) Putnam resource allocation model
(ii) Information flow metrics
(iii) Token count
(iv) Function count

Or

- (c) Draw the flowchart of risk management activity and explain various software risks. 4
- (d) Explain the important activities that are involved during software project planning. What are the difficulties faced in measuring the software costs? 6

(3)

3. (a) How are cohesion and coupling related? What problems arise if two modules have high coupling? 4
- (b) What is the importance of SRS? List the characteristics of a good quality SRS. What kind of information should an SRS include? 6
- Or*
- (c) What is data dictionary? Explain each component. 3
- (d) Draw *E-R* diagram for the following situation : 7
- An account is a relationship between customer and bank. A customer has a name. A bank has a branch. A customer may have several accounts of different types and balances.
4. (a) Explain any *two* from the following reliability models : 5×2=10
- (i) Basic model
- (ii) Logarithmic model
- (iii) Poisson model
- Or*
- (b) What is software reliability? How can one use software reliability measures to monitor the operational performance of software? What is the relation between failures and faults? 10

(4)

5. (a) Why is maintenance of software important? Discuss some of the problems that are faced during maintenance of software. 5
- (b) Explain some of the limitations of testing. Explain various types of debugging techniques used in software testing. 5
- Or*
- (c) Define software testing. Explain various levels of testing. 4
- (d) Differentiate between the following : 3×2=6
- (i) Reverse engineering and Re-engineering
- (ii) Validation testing and System testing

★ ★ ★

Subject Code : V/BCA/504 (OC)

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Booklet No. **A**

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) Exam., **2017**

Subject

Paper

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Regn. No.

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Paper

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Examiner(s)

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Invigilator(s)

V/BCA/504 (OC)

2 0 1 7

(5th Semester)

BACHELOR OF COMPUTER APPLICATION

Paper No : BCA-504 (OC)

(Software Engineering)

(Old Course)

(PART : A—OBJECTIVE)

(Marks : 25)

The figures in the margin indicate full marks for the questions

SECTION—I

(Marks : 15)

I. Tick (✓) the correct answer in the brackets provided :

1×10=10

1. Prototyping aims at

- (a) end user understanding and approval ()
- (b) program logic ()
- (c) planning logic ()
- (d) system logic ()

(2)

2. Alpha and beta testing are forms of
 - (a) acceptance testing ()
 - (b) integration testing ()
 - (c) system testing ()
 - (d) unit testing ()

3. Changes made to the system to reduce the future system failure chances is called
 - (a) preventive maintenance ()
 - (b) adaptive maintenance ()
 - (c) corrective maintenance ()
 - (d) perfective maintenance ()

4. If a program in its functioning has not met user requirements in some way, then it is
 - (a) an error ()
 - (b) a failure ()
 - (c) a fault ()
 - (d) a defect ()

(3)

5. The detailed study of existing system is referred to as
- (a) system planning ()
 - (b) system analysis ()
 - (c) feasibility study ()
 - (d) system design ()
6. A good software design must have which of the following attributes?
- (a) High module coupling, high module cohesion ()
 - (b) High module coupling, low module cohesion ()
 - (c) Low module coupling, high module cohesion ()
 - (d) Low module coupling, low module cohesion ()
7. While estimating the cost of software, Lines of Code (LoC) and Function Points (FP) are used to measure which one of the following?
- (a) Length of code ()
 - (b) Size of software ()
 - (c) Functionality of software ()
 - (d) Efficiency of software ()

8. Which software safety activity that focuses on the identification and assessment of potential hazards that may affect software negatively and cause an entire system to fail?
- (a) Risk mitigation, monitoring and management ()
 - (b) Software quality assurance ()
 - (c) Software cost estimation ()
 - (d) Defect removal efficiency ()
9. The relationship of data elements in a module is called
- (a) data coupling ()
 - (b) modularity ()
 - (c) cohesion ()
 - (d) module binding ()
10. Which one of the following is not a software myth?
- (a) Once we write the program and get it to work, our job is done ()
 - (b) Project requirements continually change, but change can be easily accommodated because software is flexible ()
 - (c) If we get behind schedule, we can add more programmers and catch up ()
 - (d) If an organization does not understand how to control software projects internally, it will invariably struggle when it outsources software projects ()

(5)

II. State whether the following statements are *True (T)* or *False (F)* in the brackets provided : 1×5=5

(a) In the context of requirements analysis, partitioning results in the elaboration of data, function or behavior.
()

(b) Application of science, tools and methods to find cost effective solution to the problems is a definition of software engineering.
()

(c) Spiral model is a combination of both iterative models and one of the SDLC models.
()

(d) Preventive maintenance is implementing changes in existing or new requirements of user.
()

(e) When elements of module are grouped because the output of one element serves as input to another element and so on, it is called sequential cohesion.
()

(6)

SECTION—II

(Marks : 10)

III. Answer the following questions : 2×5=10

1. Discuss any two software characteristics.

(7)

2. How does the risk factor affect the spiral model of software development?

3. What is the difference between hardware and software?

(8)

4. Distinguish between software faults and software failures.

5. How is software design different from coding?

2 0 1 7

(5th Semester)

BACHELOR OF COMPUTER APPLICATION

Paper No. : BCA-504

(**Software Project Management**)

Full Marks : 75

Time : 3 hours

(PART : B—DESCRIPTIVE)

(*Marks : 50*)

*The figures in the margin indicate full marks
for the questions*

1. (a) What do you mean by SPM? Describe in detail an overview of project planning. 4+6=10
- Or*
- (b) What is PERT? Explain giving suitable example. 3+7=10
2. (a) What do you mean by cost estimation? Explain COCOMO model in detail. 4+6=10

Or

- (b) What is risk management? Explain ISO and CMM in detail. 4+6=10
3. (a) What is software effort estimation? What are the objectives of activity planning? 4+6=10

Or

- (b) Explain software measurement and metrics. What are the different classifications of software metrics? 5+5=10
4. (a) What is resource allocation? Describe the seven categories of resources in detail. 3+7=10

Or

- (b) What do you mean by monitoring and control? Explain how to monitor and control resources in software project management. 5+5=10
5. (a) Define motivation. List out the methods of improving motivation. What are the qualities a leader should have? 3+4+3=10

Or

- (b) Explain in detail about selecting the right person for the job. Discuss about decision making. 4+6=10

★ ★ ★

Subject Code : V/BCA/504

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Booklet No. A

Date Stamp

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DEGREE 5th Semester
(Arts / Science / Commerce /
.....) Exam., **2017**
Subject
Paper

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(5th Semester)

BACHELOR OF COMPUTER APPLICATION

Paper No. : BCA-504

(Software Project Management)

(PART : A—OBJECTIVE)

(Marks : 25)

The figures in the margin indicate full marks for the questions

SECTION—I

(Marks : 15)

1. Put a Tick (✓) mark against the correct answer in the brackets provided : 1×10=10

(a) The first step in project planning is to determine the

(i) budget ()

(ii) team organizational model ()

(iii) project constraints ()

(iv) objectives and scope ()

(2)

(b) Which of the following is not generally considered a player in the software process?

- (i) Customer ()
- (ii) End users ()
- (iii) Project managers ()
- (iv) Salespeople ()

(c) The process each manager follows during the life of a project is known as

- (i) project management ()
- (ii) manager life cycle ()
- (iii) project management life cycle ()
- (iv) All of the above ()

(d) Which of the following is not considered as a risk in project management?

- (i) Specification delays ()
- (ii) Product competition ()
- (iii) Testing ()
- (iv) Staff turnover ()

(3)

(e) Which of the following is not achieved by an automated estimation tool?

(i) Predicting staffing levels ()

(ii) Predicting software cost ()

(iii) Predicting software schedules ()

(iv) Predicting clients demands ()

(f) Which of the following is not a software configuration management activity?

(i) Configuration item identification ()

(ii) Risk management ()

(iii) Release management ()

(iv) Branch management ()

(g) Which of the following requirements is the foundation from which quality is measured?

(i) Hardware ()

(ii) Software ()

(iii) Programmer ()

(iv) End user ()

(4)

(h) Who identifies documents, and verifies that corrections have been made to the software?

(i) Project manager ()

(ii) Project team ()

(iii) SQA group ()

(iv) Both (i) and (ii) ()

(i) PM-CMM stands for

(i) people management capability maturity model ()

(ii) process management capability maturity model ()

(iii) product management capability maturity model ()

(iv) project management capability maturity model ()

(j) Which of the following is not a project manager's activity?

(i) Project control ()

(ii) Project management ()

(iii) Project planning ()

(iv) Project design ()

(5)

2. State whether the following statements are *True (T)* or *False (F)* in the brackets provided : $1 \times 5 = 5$

(a) Management is the art of getting things done through people.

(T / F)

(b) The best person to hire as a project team leader is the most competent software engineering practitioner available.

(T / F)

(c) Project managers have to assess the risks that may affect a project.

(T / F)

(d) Software project estimation can never be an exact science, but a combination of good historical data and systematic techniques can improve estimation accuracy.

(T / F)

(e) The ISO 9000 series of standards is a program that can be used for external quality assurance purposes.

(T / F)

(6)

SECTION—II

(Marks : 10)

3. Answer the following questions : 2×5=10

(a) List out the six M's of management.

(7)

(b) What are defect metrics?

(8)

(c) Define FTR.

(d) What do you understand by software quality?

(9)

(e) Define process quality.

2 0 1 7

(5th Semester)

BACHELOR OF COMPUTER APPLICATION

Paper No. : BCA-505 (OC)

(GUI Programming : Visual Basic)

(Practical)

(Old Course)

Full Marks : 75

Time : 3 hours

*The figures in the margin indicate full marks
for the questions*

PART—I

SECTION—A

Answer *any one* question

1. Write a timer program using timer control. 20
2. Write a program to demonstrate different types of shapes using shape control. 20

SECTION—B

Answer *any one* question

3. Write a program in which the application provides convert exchange rate table for converting between US dollar and the local currency of a selected country. To operate the program, you simply pull down the country list and select a name. 30
4. With the use of multiple document interface, write a VB program by which you can access any of multiple windows. In these window, you can place any picture or text or any other documents. 30

PART—II

5. Viva voce. 15
6. Practical record book. 10

2 0 1 7

(5th Semester)

BACHELOR OF COMPUTER APPLICATION

Paper No. : BCA-506 (OC)

(Database Management System)

(Practical)

(Old Course)

Full Marks : 75

Time : 3 hours

The figures in the margin indicate full marks for the questions

I. Create the following three tables : 3×3=9

1. Salesman

SNUM	SNAME	CITY	COMMISSION
1001	PIYUSH	LONDON	12%
1002	NIRAJ	SURAT	13%
1003	MITI	LONDON	11%
1004	RAJESH	BARODA	15%
1005	ANAND	NEW DELHI	10%
1006	RAM	PATNA	10%
1007	LAXMAN	BOMBAY	09%

2. Customer

CNUM	CNAME	CITY	RATING	SNUM
2001	HARDIK	LONDON	100	1001
2002	GITA	ROME	200	1003
2003	LAXIT	SURAT	200	1002
2004	GOVIND	BOMBAY	300	1002
2005	CHANDU	LONDON	100	1001
2006	CHAMPAK	SURAT	300	1007
2007	PRATIK	ROME	100	1004

3. Order

ONUM	AMOUNT	ODATE	CNUM	SNUM
3001	18.69	10/03/99	2008	1007
3002	767.19	10/03/99	2001	1001
3003	1900.10	10/03/99	2007	1004
3004	5160.45	10/03/99	2003	1002
3005	1098.25	10/04/99	2008	1007
3006	1713.12	10/04/99	2002	1003
3007	75.75	10/05/99	2004	1002
3008	4723.00	10/05/99	2006	1001
3009	1309.95	10/05/99	2004	1002
3010	9898.87	10/06/99	2006	1001

II. Solve the following request with the help of sql query using the tables created in No. I :

1. Give all the information about all the customers with salesman number 1001. 2
2. List of all orders for more than ₹ 1000. 2
3. List all orders for more than ₹ 1000 except the orders of SNUM, 1007 of 10/03/99. 3

(3)

4. Find out the largest orders of salesman 1002 and 1007. 3
5. Count the number of salesmen currently having orders. 2
6. Create a copy of your order table. Drop the original order table. 3
7. Assume each salesperson has a 12% commission. Write a query on the order table that will produce the order number, salesman number and amount of commission for that order. 3
8. List all customers in descending order of rating. 3
9. List all customers and salesmen who are from a same city. 3
10. Find all pairs of customers served by a single salesman with the salesman's name and number. 3
11. Find all orders of the salesman who services 'Hardik'. 2
12. Count the number of customers with the rating above than the average of 'Surat'. 3
13. Create a union of two queries that shows the names, cities and ratings of all customers. Those with rating of ≥ 200 should display 'HIGH RATING' and those with < 200 should display 'LOW RATING'. 3

(4)

14. Create a view rate count that gives the count of number of customers at each rating. 3
 15. Create a table bonus that contains date-wise maximum amount of order for all salesmen. 3
- III.** Viva voce 15
- IV.** Practical record book 10
