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**[5163]-101**

**B.C.A. (First Semester) EXAMINATION, 2017**

**101 : MODERN OPERATING ENVIRONMENT AND MS-OFFICE**

**(2013 PATTERN)**

**Time : Three Hours**

**Maximum Marks : 80**

**N.B. :—** (i) *All* questions are compulsory.

(ii) Figures to the right indicate full marks.

(iii) Draw neat diagrams wherever necessary.

**1.** Answer the following (any *eight*) :

[16]

(a) Define hardware.

(b) What is the purpose of address bus ?

(c) State names of any *two* input devices.

(d) Write full forms of the following :

(i) PROM

(ii) EPROM.

(e) Define Compiler.

(f) What is time sharing operating system ?

(g) Define MAN.

(h) What is a Query ?

(i) Write features of MS-Excel.

(j) Define flowchart.

P.T.O.

- 2.** Answer the following (any *four*) : [16]
- (a) Explain generations of computer.
  - (b) Explain the bus structure of digital computer.
  - (c) Differentiate between primary and secondary memory.
  - (d) Define output device. Explain any *one* in detail.
  - (e) Draw a flowchart to print odd numbers between 1 to 50.
- 3.** Answer the following (any *four*) : [16]
- (a) Define operating system. Explain its characteristics.
  - (b) Draw diagram of coaxial cable and explain.
  - (c) Write a note on mail merge.
  - (d) Write an algorithm to print maximum of three numbers.
  - (e) Write a note on Internet.
- 4.** Answer the following (any *four*) : [16]
- (a) Write a note on applications of computer in various fields.
  - (b) Draw and explain block diagram of computer.
  - (c) Explain keyboard in detail.
  - (d) Write a note on magnetic tape.
  - (e) What is an algorithm ? Explain its characteristics.

5. Answer the following (any *four*) :

[16]

- (a) Write a note on LINUX operating system.
- (b) Differentiate between LAN and WAN.
- (c) Explain different types of charts used in MS-Excel.
- (d) What is Booting ? Explain types of booting.
- (e) Write a note on MS-PowerPoint.

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**[5163]-102**

**B.C.A. (Sem. I) EXAMINATION, 2017**

**102 : FINANCIAL ACCOUNTING**

**(2013 PATTERN)**

**Time : Three Hours**

**Maximum Marks : 80**

**N.B. :—** (i) All questions are compulsory.

(ii) Figures to the right indicate full marks.

(iii) Use of calculator is allowed.

1. What is Financial Accounting ? Explain the scope of Financial Accounting. [16]

*Or*

Define Accounting Principles. Explain the important characteristics of Accounting Principles. [16]

2. Journalise the following Transaction in the books of M/s Paul, Pune for March, 2016 : [16]

**March 2016**

- 1 Purchased goods for cash Rs. 11,500
- 3 Paid electricity charges Rs. 150
- 5 Received commission Rs. 600
- 7 Sold a scooter to Jhunjhunwala for Rs. 910
- 9 Received Rs. 100 from Jhunjhunwala
- 11 Paid transport charges Rs. 350 to Jhunjhunwala
- 13 Purchased Machinery Rs. 7,200 from Ambani Bros
- 15 Deposited Rs. 1200 in Bank of Maharashtra.

P.T.O.

3. Enter the following transactions in the Cash book of Amol (having cash book with cash and bank column) for March 2016. [16]

**March 2016**

- 1 Cash in hand Rs. 400 and bank Rs. 1,000
- 2 Sold goods to Suresh & Co. for Rs. 600 and received cash of Rs. 400 in part payment.
- 3 Purchased goods from Patel for Rs. 784 and paid the amount by issue of cheque.
- 5 Transferred Rs. 500 from private bank A/c to business bank A/c.
- 10 Issued a cheque of Rs. 200 to Bharat Furniture Works for the furniture purchased in the month of Feb. 2016.
- 12 Withdrew for personal use from bank Rs. 100
- 14 Issued a cheque to petty cashier for Rs. 175
- 15 Withdrew for office use Rs. 500
- 18 Suresh & Co. informed that they paid directly into our bank A/c the remaining balance *i.e.* Rs. 200
- 19 Bank collected interest on investments and credited to our account Rs. 200. Bank charged 1% Commission.
- 20 Issued goods against fire for Rs. 40,000 and paid insurance premium 2% by cheque.
- 21 For cash sales received a cheque from M/s Manik & Sons for Rs. 500 and deposited into the bank account immediately.
- 23 Cheque received from M/s Manik was dishonoured.
- 25 Paid salary by cheque Rs. 300
- 30 Purchased Govt. Securities of Rs. 800 @ 98%

4. The following balances were extracted from the books of Tanuja on 31st March, 2016. You are required to prepare a Trading and Profit & Loss A/c and Balance Sheet as on that date : [16]

**Trial Balances as on 31st March, 2016**

Particulars	Debit Rs.	Credit Rs.
T's Capital	—	2,00,000
Land & Buildings	87,000	
Plant & Machinery	17,500	
Goodwill	20,000	
T's Drawings	22,600	
Cash in Hand	1,795	
Stock on 1st April 2015	27,000	
Wages	10,000	
Purchases less Returns	69,000	
Carriage Inwards	600	
Traveller's Commission	6,000	
Insurance	2,000	
Motor Car	3,000	
Carriage Outward	1,400	
Sales Less Returns	—	94,000
Salaries	15,000	—
Bank Charges	105	—
Reserve for Doubtful Debts	—	1,500
Debtors	20,000	—
Creditors	—	7,500
	3,03,000	3,03,000

*Adjustments :*

1. Stock on 31st March, 2016 was Rs. 46,000.
2. Insurance Premium amounting to Rs. 800 prepaid.
3. Outstanding Salaries amounted to Rs. 1,000.
4. Depreciate Plant & Machinery @ 10% p.a. and Motor Car @ 20% p.a.
5. Create a Reserve for Doubtful Debts @ 10% on Debtors.

**5. Write short notes on (any *four*) :** [16]

- (i) Limitation of computerised Accounting
- (ii) Accounting Standards
- (iii) Trial Balance
- (iv) User of Accounting Information
- (v) Advantages of Accounting
- (vi) Disclosure Convention
- (vii) Company Final Accounts.

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**[5163]-103**

**B.C.A. (First Semester) EXAMINATION, 2017**

**113 : PRINCIPLES OF PROGRAMMING AND ALGORITHMS**

**(2013 PATTERN)**

**Time : Three Hours**

**Maximum Marks : 80**

**N.B. :—** (i) *All* questions are compulsory

(ii) Neat diagram must be drawn wherever necessary.

**1.** Answer the following (*All*) :

[8×2=16]

- (a) What is searching ?
- (b) What is row major order in an array ?
- (c) Define flowchart.
- (d) What is algorithm ?
- (e) What is local variable ?
- (f) List any *four* sorting techniques.
- (g) List the types of an array.
- (h) Explain Big-O notation in brief.

**2.** Answer the following (any *four*) :

[4×4=16]

- (a) Explain time complexity with an example.
- (b) What is flowchart ? Explain symbols used in flowchart.

P.T.O.



- (c) Write an algorithm to print table of a given number.
- (d) Draw a flow chart to check the year is leap year or not.
- (e) Write an algorithm to calculate  $x$  to the power  $y$ .
- 3.** Answer the following (any *four*) : [4×4=16]
- (a) What is an array ? Explain the types of array.
- (b) Explain any *two* sorting techniques with example.
- (c) Draw a flow chart to calculate the sum of digits of a given number.
- (d) Draw a flow chart to print factorial of a given number.
- (e) Write an algorithm print the reverse of a given number.
- 4.** Answer the following (any *four*) : [4×4=16]
- (a) List the searching techniques. Explain linear search with example.
- (b) Explain algorithm and its characteristics.
- (c) Draw a flowchart to calculate sum of first ' $n$ ' numbers.
- (d) Write an algorithm to print fibonacci series upto ' $n$ ' terms.
- (e) Draw a flowchart to find given number is palindrome or not.
- 5.** Answer the following (any *four*) : [4×4=16]
- (a) Explain the concept of recursion.

- (b) What is problem solving ? Explain any *one* technique in detail.
- (c) Write an algorithm to check given number is Armstrong or not.
- (d) Draw a flowchart to check entered number is prime or not.
- (e) Write an algorithm find maximum of three numbers.

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**[5163]-104**

**B.C.A. (First Semester) EXAMINATION, 2017**

**BUSINESS COMMUNICATION**

**(2013 PATTERN)**

**Time : Three Hours**

**Maximum Marks : 80**

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

(ii) *All* questions carry equal marks.

1. What do you mean by Communication ? Explain importance and process of Communication.
2. What is Written Communication ? Explain merits and limitations of written communication.
3. What is Business Letters ? Explain in detail layout of business letters.
4. What do you mean by oral communication ? Explain principles of effective oral communication.
5. (a) Write reply to enquiry letter to Ajinkya Stores, Mumbai about School Stationery.  
(b) Write job application letter to The Senior Officer, Goodluck Company Limited Pune, in response to an advertisement in daily Sakal for the post of HRM.

P.T.O.

- 6.** Distinguish between Telephone conferencing and Video conferencing.
- 7.** Write short notes on (any *four*) :
- (a) Functions of Communication
  - (b) Contents of Sales letters
  - (c) Principles of good listening
  - (d) Curriculum Vitae
  - (e) Presentation skills
  - (f) Email etiquette.

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**[5163]-105**

**B.C.A. (First Semester) EXAMINATION, 2017**

**105 : PRINCIPLES OF MANAGEMENT**

**(2013 PATTERN)**

**Time : Three Hours**

**Maximum Marks : 80**

**N.B. :—** (i) *All questions are compulsory.*

(ii) *All questions carry equal marks.*

**1.** What is management ? Explain the characteristics of management.

*Or*

Explain the contribution of Taylor and Fayol to management.

**2.** Define planning. Explain the advantages and limitations of planning.

*Or*

What is organising ? Explain the features of a sound organisation structure.

**3.** Write notes on :

(a) Types of Decisions

(b) Importance of Co-ordination.

*Or*

Distinguish between leadership and management. Explain the qualities of a successful leader.

P.T.O.

4. What is strategic management ? Explain the strategic management practices in India.

*Or*

Define control. Explain the relationship between planning and control.

5. Write short notes on (any *four*) :
- (a) Direction
  - (b) Stress Management
  - (c) Total Quality Management
  - (d) Disaster Management
  - (e) Management and Social Responsibility
  - (f) Levels of Management.

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[5163]-201

F.Y. B.B.A. (CA) (Second Semester) EXAMINATION, 2017

201 : PROCEDURE ORIENTED PROGRAMMING USING 'C'

(2013 PATTERN)

Time : Three Hours

Maximum Marks : 80

*N.B.* :— (i) Attempt *All* questions.

(ii) Marks are indicated against each question.

1. Answer the following (any *ten*) : [10×2=20]

(1) 'C' is middle level language. Comment.

(2) Give syntax and example of :

(1) scanf( )

(2) putchar( )

(3) Give example of nested for loop statement.

(4) Give use of break and continue statement.

(5) What is an array ? How to represent 2D- arrays in memory.

(6) Define a recursion. State advantages of recursion.

(7) What is exist function ? Give example.

(8) What is formal and actual parameter ?

P.T.O.

- (9) List different types of files.
- (10) What is escape sequence ?
- (11) Define union with example.
- (12) Define string with example.

2. Answer the following (any *four*) : [4×5=20]

- (1) Explain difference between if-else and switch-case.
- (2) Explain the different storage classes in C.
- (3) Explain the meaning of the following functions :
  - (i) strstr
  - (ii) strlen
  - (iii) toupper
  - (iv) strrev
  - (v) strcpy
- (4) Dynamic memory allocation. Explain various functions used for the same with their syntax.
- (5) Write short notes on :
  - (a) Pointer to function
  - (b) Function pointer.

3. Answer the following (any *four*) : [4×5=20]

- (a) Write a program to print all Armstrong numbers between 1 to 500.



(b) Write a program to solve the following series :

$$\frac{1^2}{1!} + \frac{2^2}{2!} + \frac{3^2}{3!} + \dots + \frac{n^2}{n!}$$

(c) Write a 'C' program for finding GCD of 2 numbers using recursion.

(d) Write a program to concatenate two strings.

(e) Write a program to accept name, author, rate, quantity of  $n$  books from user and display name of book author name and total cost.

4. Trace the output and justify (any *four*) : [4×5=20]

(1) main()

```
{  
    int m = 5;  
    if (m < 3) printf("%d", m + 1);  
    else if (m < 5) printf ("%d", m+2);  
    else if (m < 7) printf ("%d", m+3);  
    else printf ("%d", m+4);  
}
```

(2) main ()

```
{  
    int m[] = {1, 2, 3, 4, 5}  
    int x, y = 0;  
    for (x = 0; x < 5; x++)  
        y = y + m [x];  
    printf ("%d", y);  
}
```

```
(3)  main
    {
        char s1[] = "Kolkotta";
        char s2[] = "Pune";
        strcpy (s1, s2);
        printf ("%s", s1)
    }
```

```
(4)  struct
    {
        int number;
        float price;
    }

    main ()
    {
        .....
        .....
    }
```

```
(5)  m = 1;
    do
    {
        printf ("%d", m);
        m = m + 2
    }
    while (m < 10);
```

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**[5163]-202**

**B.C.A. (Second Semester) EXAMINATION, 2017**

**202 : DATABASE MANAGEMENT SYSTEM**

**(2013 PATTERN)**

**Time : Three Hours**

**Maximum Marks : 80**

**N.B. :—** (i) *All* questions are compulsory.

(ii) Neat diagrams must be drawn wherever necessary.

**1.** Answer the following (any *four*) : [4×4=16]

- (a) Explain the applications of DBMS.
- (b) Differentiate between network model and relational model.
- (c) Explain Unary and Binary relations.
- (d) List the various users of DBMS and specify their jobs.
- (e) Explain Basic file operations.

**2.** Answer the following (any *four*) : [4×4=16]

- (a) Explain the various DDL commands with examples.
- (b) Explain the Natural join and Cartesian product with example.
- (c) What is Normalization ? Explain the 1NF with suitable example.
- (d) What are the functions of Database Administrator ?
- (e) Explain the advantages and disadvantages of DBMS.

P.T.O.

3. Attempt the following : [16]

Consider the following entities and relationships.

Item (I\_no, I\_name, I\_qty)

Po (P\_no, P\_date)

Supplier (S\_no, S\_name, S\_addr)

Item and Po are related with one to many relationships along with descriptive cost and quantity. Supplier and Po are related with one-to-many relationships.

Create a RDB for the above and solve the following queries :

- (i) Insert a row in Item table.
- (ii) List the name of supplier to whom Po is given for “mouse”.
- (iii) List the name of supplier and item\_name in Po’s generated on “30-sep-2009”.
- (iv) List the names of suppliers who is going to supply “monitor” with minimum cost.
- (v) Find out Po number, Po date and supplier name of the Po which is of maximum amount.
- (vi) Display all Po which contains the number, date, supplier name of the Po details of all items included in that i.e. name of item, qty and rate.

4. Answer the following (any *four*) : [4×4=16]

- (a) What are strong and weak entities ?
- (b) Explain the following terms :
  - (i) Group by
  - (ii) Entity
  - (iii) Cardinality
  - (iv) Super key.
- (c) Write a short note on Normalization.
- (d) Explain different aggregate functions with an example.
- (e) Explain different anomalies related with Normalization.

5. Attempt the following : [8]

- (a) “Star” is an agency for flat booking and it has number of builders and agents who are jointly working. A customer can get a flat for residential or commercial purpose. If customer is approached through an agent the agency and builders are giving some commission to the agent. Agent shows various flats and sites within various location.

Study the case and do the following :

- (i) Identify all entities
- (ii) Identify all relationships
- (iii) Draw E-R diagram.

(b) Consider relational database : [8]

Supplier (Supno, sname, supaddress)

Item (Itemno, Iname, stock)

Supp-Item (Supno, Itemno, rate)

Write relational algebraic expression for the following :

(a) List all suppliers from 'Varanasi' city who supplies PISTON.

(b) Display all suppliers supply PISTON RINGS

(c) Change supplier names to upper case

(d) List all suppliers supplying DOOR Lock from 'Jaipur' city.

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**[5163]-203**

**BCA (Sem. II) EXAMINATION, 2017**

**ORGANISATIONAL BEHAVIOUR**

**(2013 PATTERN)**

**Time : Three Hours**

**Maximum Marks : 80**

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

(ii) *All* questions carry equal marks.

1. What is 'Organisational Behaviour' ? Explain 'Emerging Aspects of Organizational Behaviour'.
2. What is 'Motivation' ? Explain 'McGregor's Theory X and Theory Y'.
3. What is 'Nature of Personality' ? Explain 'Type A Type B Assessment of Personality'.
4. Define the term 'Stress'. Explain the 'Job Related Sources of Stress'.
5. What is 'Conflict' ? Explain various reasons of 'Intergroup Conflicts'.
6. What is 'Group Behaviour' ? Explain 'various factors influencing on Group Behaviour'.

P.T.O.

7. What is 'Team Building' ? Explain various 'Approaches for Effective Team Building'.
8. Write explanatory notes on (any *two*) :
- (a) Johari Window
  - (b) Goals of Organisational Change
  - (c) Overcoming Resistance to Change.



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[5163]-204

F.Y. B.B.A. (Computer Application) (Second Semester)

EXAMINATION, 2017

204 : COMPUTER APPLICATIONS IN STATISTICS

(2013 PATTERN)

Time : Three Hours

Maximum Marks : 80

*N.B.* :— (i) All questions are compulsory.

(ii) All questions carry equal marks.

(iii) Figures to the right indicate full marks.

(iv) Use of calculator is allowed.

1. Attempt any *four* of the following : [4×4=16]

(a) Explain permutation. State the formulae for total number of permutations of  $n$  distinct objects taken ' $r$ ' at a time :

(i) with repetition

(ii) without repetition.

(b) In how many ways can a committee of 5 members be formed from 5 professors and 10 students so as to include :

(i) at most 2 professors

(ii) at least 2 students on the committee.

P.T.O.

- (c) Define Bernoulli distribution. Also state its mean and variance.
- (d) Find 'r' if  ${}^9C_r - {}^8C_4 = {}^8C_5$ .
- (e) Write sample space for the following experiments :
- (i) In an experiment of rolling of a die, it is rolled till 4 appears where 'S' denotes getting 4 and 'F' denotes getting 1 or 2 or 3 or 5 or 6.
- (ii) Number of customers visiting a book-shop in a day.
- (iii) Number of defective articles in a lot of 50 articles.
- (iv) Lifetime of an electronic component.
- (f) Two different Mathematics books, four different Chemistry books and three different Physics books are arranged on a shelf:
- (i) How many arrangements of these books are possible ?
- (ii) How many arrangements will have both the mathematics text-books either at the front or at the end ?

2. Attempt any *four* of the following : [4×4=16]

- (a) Define a discrete uniform probability distribution. State the mean and variance of discrete uniform variable taking values 1, 2, 3, 4, .....n.
- (b) Find the total number of arrangements using all the letters of the word LOGARITHMS. How many of these arrangements have the consonants G and H not together ?

- (c) If A and B are two events defined on sample space such that  $P(A) = 3/8$ ,  $P(B) = 1/2$  and  $P(A \cap B) = 1/4$ , calculate :
- (i)  $P(A' \cup B')$
  - (ii)  $P(A' \cap B')$
  - (iii)  $P(A' \cap B)$ ,
  - (iv)  $P(A \cap B')$
- (d) Give classical definition of probability. Also state the addition theorem of probability.
- (e) A manufacturer of metal pistons finds that on an average, 12% of his pistons are rejected because they are either oversize or undersize. Using binomial distribution, find the probability that a batch of 10 pistons will contain no more than 2 rejects?
- (f) Explain the concept of sample space along with its types.

3. Attempt any *four* of the following : [4×4=16]

- (a) Consider an experiment of tossing of a coin with chance of getting head as  $1/3$ . If the coin is tossed once, identify the distribution of getting head. Also find its mean and variance.
- (b) Write a note on binomial distribution.
- (c) Generate a random sample of size 5 using linear congruential generator  $X_{i+1} = (6X_i + 7) \bmod 10$  with  $X_0 = 2$ .

- (d) What is the probability of two digit odd numbers formed from the digits 2, 3, 5, 7, 9 without repetition ? Also find the probability that the two digit number so formed is multiple of 5.
- (e) Define the following terms :
- (i) Event
  - (ii) Impossible event
  - (iii) Sure event
  - (iv) Elementary event.
- (f) Two fair dice are thrown. Find the probability of getting :
- (i) The sum of the nos. on their uppermost faces is at least 10.
  - (ii) The sum of the nos. on their uppermost faces is 13.
  - (iii) The sum of the nos. on their uppermost faces is divisible by 5.
  - (iv) The no. on the upper face of the first die is greater than of second die.

4. Attempt any *four* of the following : [4×4=16]

- (a) Define independent events and mutually exclusive events. Can two events be mutually exclusive and independent simultaneously ?

- (b) Find ' $n$ ' and ' $p$ ' if  $X$  follows  $B(n, p)$  with mean = 5 and variance = 4. Also verify whether it is possible to have mean = 4 and variance = 5 for binomial distribution ? Justify.
- (c) Define simulation. State its *two* merits and *two* demerits.
- (d) Three coins are tossed together. The events are defined as below :
- A : Exactly 2 coins show heads, B : At least 2 coins show heads.
- Verify whether A and B are mutually exclusive. Are they exhaustive ?
- (e) Determine which of the following are deterministic or non-deterministic experiments :
- (i) Number of students attending the class.
- (ii) Drawing a card from a well shuffled pack of playing cards.
- (iii) Two digit number/numbers which can be formed from the digits 0 and 1.
- (iv) Blood group of a student selected at random from a particular class.
- (f) Let A and B be two independent events defined on a sample space. The probability that at least one event out of A or B occurs is 0.7, while the probability that A occurs is 0.5. Determine the probability that B occurs.

5. Attempt any *two* of the following : [2×8=16]

(a) Simulate the points on the uppermost face of an unbiased die for 8 throws using uniform distribution with the random numbers 0.12, 0.07, 0.95, 0.83, 0.71, 0.5, 0.53, 0.28.

(b) In a shop, the number of laptops those can be sold shows the following probability distribution :

X	P(x)
0	0.05
1	0.2
2	0.12
3	0.13
4	0.3
5	0.15
6	0.05

Simulate the number of laptops which can be sold in 10 days using random numbers 0.12, 0.21, 0.01, 0.17, 0.35, 0.81, 0.38, 0.79, 0.64, 0.2.

(c) In a manufacturing process, the number of defective articles per hour found to follow B (5, 0.2). Simulate the number of articles which can be found to be defective in 8 hours during the manufacturing process.

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**[5163]-205**

**B.B.A. (CA) (II Sem.) EXAMINATION, 2017**

**205 : E-COMMERCE CONCEPTS**

**(2013 PATTERN)**

**Time : Three Hours**

**Maximum Marks : 80**

**N.B. :—** (i) *All* questions are compulsory.

(ii) Figures to the right indicate full marks.

**1.** Answer the following (any *eight*) :

[8×2=16]

- (i) Define Router.
- (ii) What is a worm ?
- (iii) What is G2G E-commerce ?
- (iv) What is Target email ?
- (v) Define Digital Certificate.
- (vi) Define Intranet.
- (vii) What is payment cart ?
- (viii) What is online banking ?
- (ix) State any *two* types of website.
- (x) What is Phishing ?

**2.** Answer any *four* of the following :

[4×4=16]

- (i) Explain types of Encryption.
- (ii) Define Extranet. State its advantages.

P.T.O.

- (iii) Explain banner exchange in detail.
  - (iv) Explain working of B2B.
  - (v) Explain applications of E-Commerce.
- 3.** Answer any *four* of the following : [4×4=16]
- (i) Explain credit card system.
  - (ii) Explain dimensions of e-commerce security.
  - (iii) Explain domain name registrars in detail.
  - (iv) What is hacking ? Explain types of hackers.
  - (v) Explain cryptography in detail.
- 4.** Answer any *four* of the following : [4×4=16]
- (i) What is Virus ? Explain its types.
  - (ii) Explain types of electronic payment system.
  - (iii) Differentiate between intranet and extranet.
  - (iv) What is RTGS ? Explain types of RTGS fund transfer.
  - (v) What is ecash processing in detail ?
- 5.** Write short notes on (any *four*) : [4×4=16]
- (i) WWW
  - (ii) ATM
  - (iii) B2A
  - (iv) I-cheque
  - (v) Micropayment.



Total No. of Questions—5]

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**[5163]-301**

**B.C.A. (III Sem.) EXAMINATION, 2017**

**301 : RELATIONAL DATABASE MANAGEMENT SYSTEM (RDBMS)**

**(2013 PATTERN)**

**Time : Three Hours**

**Maximum Marks : 80**

**N.B. :—** (i) *All* questions are compulsory.

(ii) Figures to the right indicate full marks.

**1. Attempt *all* :** [16]

(a) Give any *two* differences between DBMS and RDBMS.

(b) What is trigger ? List types of trigger.

(c) What is transaction ? List properties of transaction.

(d) Define :

(i) growing phase

(ii) shrinking phase.

(e) List different types of failures.

(f) Define cascadeless schedule.

(g) Give Lock-compatibility matrix.

(h) Write syntax of nested if statement in PL/SQL with example.

**2. Attempt any *four* :** [16]

(a) Explain any *four* objects of oracle.

P.T.O.

- (b) Explain the following predefined exception :  
no-data-found, zero-divide, two-many-rows, duplicate-val-on-index.
- (c) Explain states of transaction with the help of suitable diagram.
- (d) What is PL/SQL ? Explain different data types in PL/SQL.
- (e) What is deadlock ? Explain deadlock prevention methods.

**3.** Attempt any *four* : [16]

- (a) Write a short note on storage type.
- (b) What is cursor ? List attributes of cursor with an example.
- (c) What is serializability ? Explain view serializability with example.
- (d) Explain Thomas write rule.
- (e) Explain remote backup system with the help of a diagram.

**4.** Attempt any *four* : [16]

- (a) Consider the following relational database :

Employee(eno, ename, city, deptname)

Project(pno, pname, status)

Emp-proj(eno, pno, no-of-days)

Write a procedure which will take employee no as a parameter and display total no. of projects on which given employee works.

(b) Consider the following relational database :

Book(bno, bname, pubname, price, dno)

Dept(dno, dname, location)

Write a function which will return total expenditure on books of a given department.

(c) Consider the following relational database :

Dept(dno, dname, location)

Employee(empno, empname, salary, comm, designation, dno)

Define a trigger that will take care of the constraint that employee salary should not be less than zero.

(d) Consider the following relational database :

Party(P-code, P-name)

Politician(pno, pname, designation, p-code)

Write a cursor to display details of all politician of 'BJP' party.

(e) Write a package which consist of one procedure and one function.

Consider relation student :

Student(Roll-no, stud-name, class, stud-addr, percentage)

Procedure of a package will display details of given student  
function of a package will count total number of students having  
percentage >70 and class 'SYBCA'.

5. Attempt any four :

[16]

(a) Consider the following transactions :

<b>T<sub>1</sub></b>	<b>T<sub>2</sub></b>
Read(z)	Read(x)
$z = z + 100$	Read(y)
Write(z)	$y = y - x$
Read(y)	Write(y)
$y = y - 100$	
Write(y)	

Give *two* non-serial schedules that are serializable.

(b) Consider the following transactions :

<b>T<sub>1</sub></b>	<b>T<sub>2</sub></b>
Read(A)	Read(A)
$A = A + 1000$	$A = A - 1000$
Write(A)	Write(A)
	Read(B)
	$B = B + 1000$
	Write(B)

Give *two* non-serial schedules that are serializable.

- (c) The following is the list of events in an interleaved execution of set  $T_1, T_2, T_3$  and  $T_4$  assuming 2PL protocol. Is there a deadlock ? If yes, which transactions are involved in deadlock ?

<b>Time</b>	<b>Transaction</b>	<b>Code</b>
$t_1$	$T_1$	Lock(A, X)
$t_2$	$T_2$	Lock(B, X)
$t_3$	$T_3$	Lock(C, X)
$t_4$	$T_4$	Lock(A, S)
$t_5$	$T_1$	Lock(C, S)
$t_6$	$T_2$	Lock(D, S)
$t_7$	$T_3$	Lock(D, X)
$t_8$	$T_4$	Lock(B, X)

- (d) The following is the list representing the sequence of events in an interleaved execution of set transactions  $T_1, T_2, T_3$  and  $T_4$  assuming 2PL protocol. Construct a wait for graph according to request. Is there deadlock at any instance. Justify.

<b>Time</b>	<b>Transaction</b>	<b>Code</b>
$t_1$	$T_1$	Lock(A, X)
$t_2$	$T_2$	Lock(C, S)
$t_3$	$T_3$	Lock(A, S)
$t_4$	$T_4$	Lock(C, S)
$t_5$	$T_1$	Lock(B, X)
$t_6$	$T_2$	Lock(B, S)
$t_7$	$T_3$	Lock(D, S)
$t_8$	$T_4$	Lock(D, X)

(e) The following are the log entries at the time of system crash :

[start-transaction, T<sub>2</sub>]

[write-item, T<sub>1</sub>, B, 200]

[commits, T<sub>1</sub>]

[checkpoint]

[start-transaction, T<sub>2</sub>]

[write-item, T<sub>2</sub>, C, 250]

[commit, T<sub>2</sub>]

[start-transaction, T<sub>3</sub>]

[write-item, T<sub>3</sub>, C, 300]

[start-transaction, T<sub>4</sub>]

[write-item, T<sub>4</sub>, A, 400]

[write-item, T<sub>3</sub>, D, 250] ← system crash

If deferred update technique with checkpoint is used, what will be recovery procedure ?

Total No. of Questions—5]

[Total No. of Printed Pages—3

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**[5163]-302**

**B.C.A. (Sem. III) EXAMINATION, 2017**

**302 : DATA STRUCTURE USING C**

**(2013 PATTERN)**

**Time : Three Hours**

**Maximum Marks : 80**

**N.B. :—** (i) All questions are compulsory.

(ii) All questions carry equal marks.

(iii) Assume suitable data, if necessary.

**1. Attempt any *eight* of the following :**

**[8×2=16]**

(a) What is Self Referential structure ?

(b) What is efficiency of linear search method ?

(c) What is difference between Binary Tree and Binary Search Tree ?

(d) What are the different types of data structures ?

(e) What are the applications of queue ?

(f) What is almost complete binary tree ?

(g) What is Double Ended Queue ?

(h) State the types of graph.

(i) What is the use of (&) address operator and Dereferencing (\*) operator ?

(j) What is Pointer ? What are the operations we can perform on the pointer ?

P.T.O.

2. Attempt any *four* of the following : [4×4=16]
- (a) Write an algorithm to convert given infix expression to postfix expression.
  - (b) What is height-balanced tree ? Explain LL and RR rotations with an example.
  - (c) Differentiate between BFS and DFS.
  - (d) Write a function to display doubly linked list in reverse order.
  - (e) Explain different types of recursive tree traversing techniques with an example.
3. Attempt any *four* of the following : [4×4=16]
- (a) Explain Quick sort technique with an example.
  - (b) What is doubly circular linked list ? Explain its node structure.
  - (c) What are the drawbacks of sequential storage ?
  - (d) Write a function to sort given singly linked list.
  - (e) Write a function to check whether given expression is parenthesis or not.
4. Attempt any *four* of the following : [4×4=16]
- (a) Explain different types of dynamic memory allocation functions.
  - (b) Sort following data by using Merge sort techniques :  
12, 5, 122, 9, 7, 54, 4, 23, 88, 60
  - (c) Write a function to remove given node from singly linked list and add it at the given position in singly linked list.
  - (d) Write a function to create and display circular singly linked list.
  - (e) Evaluate the following Postfix expression :  
4, 5, 4, 2, ^, +, \*, 2, 2, ^, 9, 3, 1, \*, -



5. Attempt any *four* of the following : [4×4=16]
- (a) Differentiate between doubly linked list and tree.
  - (b) Explain Kruskal's algorithm for minimum spanning tree with an example.
  - (c) Construct Binary Search Tree for the following Data :  
July, Jan, Feb, Dec, Mar, Oct, Nov, Apr, Jun, Aug
  - (d) Explain Binary Search Method with an example.
  - (e) Write a function to remove first node from singly linked list and display remaining list.

Total No. of Questions—5]

[Total No. of Printed Pages—4

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**[5163]-303**

**B.C.A. (Third Semester) EXAMINATION, 2017**

**303 : INTRODUCTION TO OPERATING SYSTEM**

**(2013 PATTERN)**

**Time : Three Hours**

**Maximum Marks : 80**

**N.B. :—** (i) *All* questions are compulsory

(ii) Neat diagrams must be drawn wherever necessary.

1. Attempt any *eight* of the following :

[8×2=16]

- (a) What is system call ?
- (b) Define Belady's Anomaly.
- (c) What is multiprogramming ?
- (d) Define waiting time.
- (e) Define dispatcher.
- (f) What is dynamic loading ?
- (g) What is page fault ?
- (h) What is safe sequence ?
- (i) Define operating system.
- (j) What is the role of valid and invalid bits in demand paging ?

P.T.O.

2. Attempt any *four* of the following : [4×4=16]

- (a) List and explain advantages of multiprocessor system.
- (b) Explain multilevel queue algorithm.
- (c) Explain demand paging in detail.
- (d) Explain sequential access method.
- (e) Calculate average turn around time and average waiting time for all set of processes using FCFS algorithm :

Process	Burst Time	Arrival Time
P <sub>1</sub>	3	1
P <sub>2</sub>	5	0
P <sub>3</sub>	9	4
P <sub>4</sub>	6	5

3. Attempt any *four* of the following : [4×4=16]

- (a) List and explain solution to the critical section problem.
- (b) Discuss services provided by operating system.
- (c) Explain the use of DMA.
- (d) Discuss any *two* types of system calls.
- (e) Consider the following page reference string :

4, 6, 7, 8, 4, 6, 9, 6, 7, 8, 4, 6, 7, 9.

The number of frames is 3. Show page trace and calculate page fault for the following page replacement schemes :

- (i) FIFO
- (ii) LRU.

4. Attempt any *four* of the following : [4×4=16]

- (a) What is free space list ? Explain the methods of free space management.
- (b) Explain different states of processes.
- (c) Explain long term scheduler in detail.
- (d) Discuss various characteristics for handling deadlock.
- (e) Consider the following segment table :

Segment	Base	Length
0	363	500
1	1272	20
2	1675	1500
3	986	240
4	211	130

What are the physical addresses for the following logical addresses :

- (i) 0,425
- (ii) 2,500
- (iii) 3,285
- (iv) 4,125.

5. Attempt any *four* of the following : [4×4=16]

- (a) List and explain basic operations on file.
- (b) Explain time sharing system with an example.
- (c) Explain shared pages.
- (d) Assume there are total 0—199 tracks that are present on each surface of the disk. If request queue is :

68, 172, 4, 178, 130, 40, 118, 136

and initial position of the head is .25. Apply FCFS disk scheduling algorithm and calculate total head movement.

(e) Consider the five processes  $P_0, P_1, P_2, P_3, P_4$  and three resources  $R_1, R_2, R_3$  :

	Allocation			MAX			Available		
	$R_1$	$R_2$	$R_3$	$R_1$	$R_2$	$R_3$	$R_1$	$R_2$	$R_3$
$P_0$	0	1	0	7	5	3	3	3	2
$P_1$	2	0	0	3	2	2			
$P_2$	3	0	2	9	0	2			
$P_3$	2	1	1	2	2	2			
$P_4$	0	0	2	4	3	3			

Answer the following questions using Banker's algorithm :

(i) What are the contents of need matrix ?

(ii) Is the system in a safe states ? Find the safe sequence.

Total No. of Questions—5]

[Total No. of Printed Pages—6

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[5163]-304

**B.C.A. (Commerce Faculty) (Sem. III) EXAMINATION, 2017**  
**BUSINESS MATHEMATICS**  
**(2013 PATTERN)**

**Time : Three Hours**

**Maximum Marks : 80**

**N.B. :—** (i) All questions are compulsory.

(ii) Figures to the right indicate full marks.

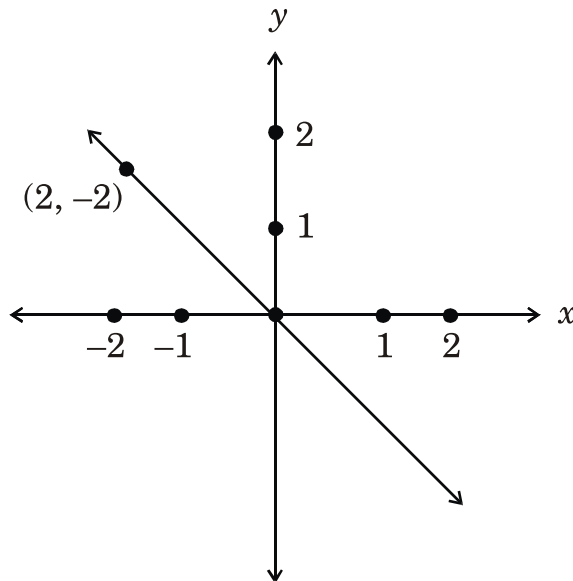
(iii) Use of non-programmable scientific calculator is allowed.

(iv) Symbols have their usual meaning.

1. (A) Attempt any *one* of the following :

[1×6=6]

- (i) The ratio of the number of the boys to the number of girls in a school of 500 students is 3 : 2. If 50 new girls are admitted in the school, find how many new boys may be admitted so that the ratio of the number of boys to the number of girls may change to 7 : 5.
- (ii) Use the following diagram to find the relationship that exists between  $x$  and  $y$ . Hence find  $y$  when  $x$  is 10.



P.T.O.

(B) Attempt any *two* of the following : [2×5=10]

(i) For four integers  $a, b, c, d$ , if  $a : b = c : d$ , then prove :

(a)  $a : c = b : d$

(b)  $a + b : b = c + d : d$ .

(ii) A detergent factory makes 1000 boxes in 6 days with the help of 15 machines. In the same manner how many boxes can be produced in 15 days with the help of 21 machines.

(iii) Weekly profit of Rs. 1,00,000 is to be divided among four partners in the ratio 1 : 2 : 3 : 4. How much does each partner get ?

2. (A) Attempt any *one* of the following : [1×6=6]

(i) By selling two motor cars Rs. 99,000 each a trader gain 10% on one car and 10% loss on other car. What was his total gain or loss ? Find percentage gain or loss on total transaction.

(ii) Three articles were sold through an agent for Rs. 10,000, 15,000 and 20,000 respectively. The rate of commission was 10% and 15% on first and second article respectively. If on the whole the agent received a commission on 20%, find the commission received from third article.

- (B) Attempt any *two* of the following : [2×5=10]
- (i) A TV set costing Rs. 20,000 was sold for Rs. 19,000.  
Find % loss.
- (ii) An article when sold for Rs. 1,400 resulted in the loss of 30%. What was the cost price of the article ?
- (iii) An agent is paid commission at 8% on cash sales and 6% on credit sales made by him. If 35% of his sales are for cash and rest on the credit, find average rate of commission earn by him.
3. (A) Attempt any *one* of the following : [1×6=6]
- (i) Explain the terms with appropriate formulae :
- (a) Simple interest
- (b) Compound interest.
- (ii) The simple interest on a certain sum at a certain rate of interest is Rs. 500 for 5 years, and compound interest for two years is 210. Find the rate of interest.
- (B) Attempt any *two* of the following : [2×5=10]
- (i) Kartik bought a music system costing Rs. 25,000 on an instalment basis under 25 monthly equal instalment including interest at 12% per annum. Find equated monthly instalment by flat rate system.



(ii) If

$$\begin{bmatrix} a & b \\ c & d \end{bmatrix} - 2 \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix} = \begin{bmatrix} 3 & 0 \\ -3 & -6 \end{bmatrix}$$

find value of  $a$ ,  $b$ ,  $c$ ,  $d$ .

(iii) If

$$A = \begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 7 & 8 & 9 \end{bmatrix},$$

find determinant of  $A$ .

4. (A) Attempt any *one* of the following :

[1×6=6]

(i) Find inverse of matrix  $A$ ,

$$\text{where } A = \begin{bmatrix} 1 & 2 & 1 \\ 2 & 0 & 3 \\ 1 & 3 & 0 \end{bmatrix}.$$

(ii) Solve the following system of linear equations by inversion method :

$$x + 2y + z = 8$$

$$2x - y + z = 3$$

$$3x + 2y - 2z = 1.$$

- (B) Attempt any *two* of the following : [2×5=10]
- (i) Explain mathematical model of linear programming problem.
  - (ii)  $y$  varies inversely as  $x$ . When  $y$  is 5, then  $x$  is 10. If  $x$  is 25, then find value of  $y$ .
  - (iii) What will be amount of 8,000 in 5 years at 10% per annum in simple interest ?

5. (A) Attempt any *one* of the following : [1×6=6]

- (i) If

$$A = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}, \quad B = \begin{bmatrix} 4 & 3 \\ 2 & 1 \end{bmatrix},$$

then check whether :

$$(A + B) \cdot (A - B) \neq A^2 - B^2.$$

- (ii) A soap manufacturing company produces two types of soaps A and B. To produce 1 soap of each type A and B requires Rs. 3 and Rs. 4 for pesticides respectively, Rs. 2 and Rs. 3 for scent, Rs. 3 and Rs. 2 for colours. Condition on expenditure of each soap for pesticide, for scent and for colours is at most 6,000, 4,500 and 5,500 in a day respectively. Profit on one soap of type A and of type B is Rs. 10 and Rs. 12 each. Formulate above situation as a linear programming problem and find number of items to be produced of each type of soap to obtain maximum profit.

(B) Attempt any *two* of the following : [2×5=10]

(i) Solve the following linear programming problem graphically :

$$\begin{aligned} \text{Maximize} \quad & Z = 2x + 3y \\ \text{s.t.} \quad & 2x + y \leq 4 \\ & x + 2y \leq 4 \\ & x - y \geq 0 \text{ and } x, y \geq 0 \end{aligned}$$

(ii) Explain transportation problem with help of proper example.

(iii) Find initial basic feasible solution of the following transportation problem by north-west corner rule :

2	3	5	7	6	8	2	100
4	6	9	8	7	5	3	300
7	5	3	9	6	8	5	300
9	8	4	5	6	7	7	400
7	8	9	3	5	8	9	200
8	8	6	4	3	9	8	100
6	6	5	5	4	3	6	50
300	200	100	200	400	150	100	

Total No. of Questions—5]

[Total No. of Printed Pages—3

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**[5163]-305**

**B.C.A. (Sem. III) EXAMINATION, 2017**

**SOFTWARE ENGINEERING**

**(2013 PATTERN)**

**Time : Three Hours**

**Maximum Marks : 80**

**N.B. :—** (i) *All* questions are compulsory.

(ii) *All* questions carry equal marks.

1. Attempt the following (any *eight*) : [16]

- (1) State advantages of Modular Programming.
- (2) Define Unit Testing.
- (3) What are the elements of system ?
- (4) Explain the mapping cardinality in Relationship.
- (5) State any *two* advantages of waterfall model.
- (6) Define SRS.
- (7) Explain control-feedback concept in a system.
- (8) Describe and draw symbols of E-R diagram.
- (9) State any *two* types of feasibility study.
- (10) Give advantages of Data Dictionary.

P.T.O.

- 2.** Answer the following (any *four*) : [16]
- (1) Explain RAD model in detail.
  - (2) Explain software characteristics in detail.
  - (3) Explain testing characteristics in detail.
  - (4) Explain Requirement Anticipation in detail.
  - (5) Explain structured chart in detail.
  - (6) Explain any *four* types of system in detail with example.
- 3.** (A) Design an I/P screen layout for employees salary slip. [8]
- (B) Draw decision tree and decision table for the following case :  
A company gives discount on the purchase of goods depending on the sale and duration of payment : [8]
- (a) 5% discount if order amount > 50,000.
  - (b) 3% discount if order amount between 25,000 and 50,000
  - (c) No discount if order amount < 10,000 or payment is not done within 8 days.
- 4.** Write short notes on (any *four*) : [16]
- (1) Black box testing
  - (2) Pseudo code
  - (3) Fact finding techniques
  - (4) Types of cohesion
  - (5) McCall's quality factors.

5. Maxwell is a trading company which sells various consumables to its dealers. On receiving enquiry from dealers, the company sends quotation to dealer. The dealer then sends order to company. If stock is available then the order acceptance is sent to dealer and subsequently invoice—cum—delivery challan is sent to dealer : [16]

- (1) Identify all the entities.
- (2) Draw a context level DFD.
- (3) Draw a 1st Level DFD for the above case.

Total No. of Questions—5]

[Total No. of Printed Pages—4+2

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[5163]-401

S.Y. B.C.A. (Fourth Semester) EXAMINATION, 2017

401 : OBJECT ORIENTED PROGRAMMING USING C++

(2013 PATTERN)

Time : Three Hours

Maximum Marks : 80

**N.B.** :— (i) All questions are compulsory.

(ii) All questions carry equal marks.

(iii) Assume suitable data, if required.

(iv) Figures to the right indicate full marks.

1. Attempt any *eight* of the following :

[8×2=16]

(a) Define abstraction.

(b) What is inline function ?

(c) What is the purpose of setw and endl ?

(d) Define constructor.

(e) What is abstract class ?

(f) What is the use of this pointer ?

(g) What is pure virtual function ?

(h) What is reference variable ?

P.T.O.

- (i) Write two-way for opening a file in C++.
- (j) What is fstream ?

2. Attempt any *four* of the following : [4×4=16]

- (a) Differentiate between procedure oriented languages and object oriented languages.
- (b) Explain memory management operators with the help of suitable example.
- (c) Explain use of default argument in a function with suitable example.
- (d) What is friend function ? Write any *three* characteristics of it.
- (e) Explain virtual base class with a suitable example.

3. Attempt any *four* of the following : [4×4=16]

- (a) Explain the structure of a C++ program.
- (b) Write a note on implicit and explicit type conversion.
- (c) Write a C++ program to calculate area and circumference of a circle using inline function.
- (d) Explain parameterized constructor with the help of suitable example.



(e) Design a base class person (name, address, phone-no). Derive a class employee (eno, ename) from person. Derive a class manager (designation, department, basic-salary) from employee. Accept all details of  $n$  managers and display manager having highest salary.

4. Attempt any *four* of the following : [4×4=16]

(a) Write a note on polymorphism.

(b) Write a program to calculate area of a rectangle and a triangle using function overloading.

(c) Explain rules of operator overloading.

(d) Write a note on class template.

(e) Trace the output of the following program and explain it. Assume there is no syntax error.

```
# include < iostream.h>

class abc
{
    int i;

    public :

    abc (int v = 0)
    {
        cout <<"In the constructor\n";

        i = v;
    }
}
```

```

    }

    void print (void)

    {

    cout <<"The value of i is "<<i << endl;

    }

};

void main( )

{

    abc a(10);

    abc b;

    a. print( );

    b. print( );

}

```

5. Attempt any *four* of the following : [4×4=16]
- (a) Explain use of `setfill( )` and `setiosflags( )` manipulators with the help of suitable example.
  - (b) Write a note on exception handling.
  - (c) Write a program to display the contents of a text file in the reverse order.
  - (d) Write a program to swap two integers using function template.

- (e) Trace output of the following program and explain it. Assume there is no syntax error.

```
# include <iostream.h>
class B
{
    public:
    void f1()
    {
        cout <<"In base f1 " <<endl;
    }
    virtual void f2()
    {
        cout <<"In base f2 " <<endl;
    }
    virtual ~B()
    {
        cout <<"In base destructor" <<endl;
    }
};
class D : public B
{
    Public:
    Void f1()
    {
        cout <<"In derived f1 " <<endl;
    }
}
```

```
void f2( )
{
    cout <<"In derived f2 " <<endl;
}
~D()
{
    cout <<"In derived destructor" << endl;
}
};
void main ( )
{ B* ptr = new D;
  ptr → f1(); ptr → f2();
  delete ptr; }
```

Total No. of Questions—5]

[Total No. of Printed Pages—3

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**[5163]-402**

**S.Y. B.C.A. (Fourth Semester) EXAMINATION, 2017**

**PROGRAMMING IN VISUAL BASIC**

**(2013 PATTERN)**

**Time : Three Hours**

**Maximum Marks : 80**

**N.B. :—** (i) All questions are compulsory.

(ii) Figures to the right indicate full marks.

(iii) Give illustrate wherever necessary.

1. Explain the following property setting (any *eight*) : [8×2=16]
- (a) Property used to display a read only combo box.
  - (b) Property used to set special password character of Text Box.
  - (c) Property used to disable label control.
  - (d) Property used to display information on the command button.
  - (e) Property used to place a picture on a command button.
  - (f) Property used to set value of check box.
  - (g) Property used to set current path of folder of directory list box.
  - (h) Property used to count number of items in list box.
  - (i) Property used to sort items in combo box.
  - (j) Property used to resize image control.

P.T.O.

**2.** Answer the following (any *four*) : [16]

(a) What are Control Arrays ? Explain with the help of a suitable example.

(b) Explain Message Box with syntax and example.

(c) Explain data types in visual basic.

(d) Explain any *four* string functions with suitable example.

(e) Explain if-then-else statement with syntax with example.

**3.** Attempt the following (any *four*) : [16]

(a) Write a VB program to check given number is prime or not.

(b) Write a VB program to find maximum number from an array.

(c) Write a VB program to calculate  $x^y$  without using built-in function.

(d) Write a menu driven program in VB to perform the following :

- Area of Rectangle
- Area of Triangle.

(e) Write a VB program to accept a string and Text box and revised set and display.

4. Attempt the following (any *two*) : [16]

(a) What is Event ? Explain various events related with Mouse and Keyboard.

(b) Define Array and explain types of array with syntax and example.

(c) Write a VB program to accept the details of Doctor from user and store that details into the database (Don't use standard control) doctor having

Doctor\_id, Doctor\_name, Doctor\_address, Doctor\_phoneno.

5. Write short notes on (any *four*) : [16]

(a) Status bar

(b) Toolbar control

(c) Common Dialog Box

(d) Data Report

(e) ADO DC Control.

Total No. of Questions—5]

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**[5163]-403**

**BCA (Sem. IV) EXAMINATION, 2017**

**403 : COMPUTER NETWORKING**

**(2013 PATTERN)**

**Time : Three Hours**

**Maximum Marks : 80**

**N.B. :—** (i) All questions are compulsory.

(ii) Draw neat and labelled diagram whenever necessary.

**1.** Attempt any *three* of the following : [3×5=15]

- (a) Explain different components of LAN.
- (b) Explain the functions of Transport Layer in OSI-Reference Model.
- (c) Explain Infra-Red wireless transmission.
- (d) What is NIC ? Explain component of NIC.

**2.** Attempt any *three* of the following : [3×5=15]

- (a) Define Computer Network. Explain goals of Computer Network.
- (b) What are different modes of Communication ? Explain any *one*.
- (c) What is Switch ? How does it differ from HUB ?
- (d) Explain different types of web-documents ?

P.T.O.



- 3.** Attempt any *three* of the following : [3×5=15]
- (a) What is Bridge ? List its types. Explain any *one*.
  - (b) Explain active and passive HUB.
  - (c) Explain co-axial cable in detail.
  - (d) Draw TCP/IP model and state the functions of each layer.
- 4.** Attempt any *three* : [3×5=15]
- (a) What is Topology ? Explain ring topology.
  - (b) Explain classful addressing of TCP/IP model in detail.
  - (c) What are different propagation methods ? Explain any *one*.
  - (d) Explain Ethernet with reference to its types.
- 5.** Write notes on (any *four*) : [4×5=20]
- (a) Intranet and Extranet
  - (b) SAP
  - (c) Repeaters
  - (d) HTTP
  - (e) Packet filter firewall
  - (f) Bluetooth.

Total No. of Questions—5]

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[5163]-404

**S.Y. B.C.A. (Fourth Semester) EXAMINATION, 2017**

**404 : ENTERPRISE RESOURCE PLANNING AND  
MANAGEMENT**

**(2013 PATTERN)**

**Time : Three Hours**

**Maximum Marks : 80**

**N.B. :—** (i) *All* questions are compulsory.

(ii) Neat diagrams must be drawn wherever necessary.

**1. Answer in short :** [8×2=16]

- (a) Define BRP
- (b) Define data warehouse
- (c) What is SAP ?
- (d) Define EIA.
- (e) Define enterprise
- (f) Define IDOC application
- (g) Define OCR integration
- (h) List types of business models.

**2. Answer the following (any *four*) :** [4×4=16]

- (a) Discuss role of common/shared enterprise database.
- (b) Explain pros and cons of inhouse implementation.

P.T.O.

- (c) What is ERP ? What are benefits of ERP ?
- (d) Explain the installation process of SAP.
- (e) Explain different phases of B.P.R. (Business Process Re-engineering)
- 3.** Answer the following (any *four*) : [4×4=16]
- (a) Explain linkage of enterprise. Explain any one link.
- (b) Explain the working of EIA.
- (c) Explain characteristics and feature of ERP.
- (d) Explain role of consultants for ERP.
- (e) What is data mining ? Explain advantages of data mining.
- 4.** Answer the following (any *four*) : [4×4=16]
- (a) Explain the components of EDI.
- (b) Explain in brief SAP business structure.
- (c) Explain customer relationship management in detail.
- (d) Explain generic model of ERP system.
- (e) What are the trends and products of EAI ? Explain in detail.
- 5.** Write short notes on (any *four*) : [4×4=16]
- (a) Phased implementation
- (b) Components of data warehouse
- (c) Client/server architecture of enterprise
- (d) Jd Edwards
- (e) Advantages and disadvantages of EDI.

Total No. of Questions—6]

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**[5163]-405**

**B.C.A. (IV Sem.) EXAMINATION, 2017**

**HUMAN RESOURCE MANAGEMENT**

**(2013 PATTERN)**

**Time : Three Hours**

**Maximum Marks : 80**

**N.B. :—** (i) Question No. 6 is compulsory. Attempt any *four* questions from the remaining.

(ii) Figures to the right indicate full marks.

(iii) Draw figures/charts wherever necessary.

1. Define 'Human Resource Management' (HRM). Explain various functions of HRM. [15]
2. What is meant by 'External Sources of Recruitment' ? Describe advantages and disadvantages of External Sources of Recruitment. [15]
3. What is 'Training' ? Why is it needed ? Explain the objectives of Training. [15]
4. What are the Essential Characteristics of a Good Wage System ? Explain the factors affecting wages. [15]

P.T.O.

- 5.** What is 'E-Learning' ? What are its requisites ? Describe advantages and disadvantages of E-Learning. [15]
- 6.** Write short notes on (any *four*) : [20]
- (a) Advantages and disadvantages of E-Recruitment
  - (b) Elements of Discipline
  - (c) Profit Sharing
  - (d) H.R. Planning
  - (e) Promotion and Demotion
  - (f) Advantages of Performance Appraisal.

Total No. of Questions—5]

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**[5163]-501**

**B.C.A. (V Sem.) EXAMINATION, 2017**

**501 : JAVA PROGRAMMING**

**(2013 PATTERN)**

**Time : Three Hours**

**Maximum Marks : 80**

- N.B. :—** (i) *All* questions are compulsory and carry equal marks.  
(ii) Assume suitable data, if necessary.  
(iii) Figures to the right indicate full marks.

1. Attempt any *eight* : [8×2=16]
- (a) State any *four* interfaces used in Event Handling.
  - (b) What is the use of 'final' keyword ?
  - (c) Give any *two* differences between abstract class and interface.
  - (d) What is the use of File class ?
  - (e) What is a Vector ?
  - (f) Can an Applet have a constructor ? Justify.
  - (g) What are the different types of byte streams in Java ?
  - (h) Explain the default access specifier.
  - (i) What is the purpose of abstract keyword ?
  - (j) List any *four* Wrapper classes.

P.T.O.

2. Attempt any *four* :

[4×4=16]

(a) Write a java program for the following :

Enter a String	<input type="text"/>	
Resultant String	<input type="text"/>	
<input type="button" value="Lowercase"/>	<input type="button" value="Uppercase"/>	<input type="button" value="Length"/>

(b) What is an Applet ? Explain its life cycle.

(c) Write a note on Packages in Java.

(d) What is Layout Manager ? Explain any *one* in detail.

(e) Write a java program to accept name from the user. If the name contains a non-alphabetical character, raise an Exception “InvalidNameException”.

3. Attempt any *four* :

[4×4=16]

(a) What is an Adapter class ? Explain its need with example.

(b) Write a package StrPack which has two classes Concat and Compare. Concat class has a method to concatenate two strings and Compare class has a method to compare two strings. Display appropriate messages.

(c) Explain Data Types in Java.

(d) Explain Arrays in Java.

(e) Write a java program to accept n numbers from the command line and display in ascending order.

4. Attempt any *four* : [4×4=16]
- (a) Accept two numbers as input to the Applet using PARAM tag and display the addition of the two numbers.
  - (b) Accept names from the command line and add them to the LinkedList. Also display the LinkedList.
  - (c) Write a short note on Strings. Explain any *four* methods of the string class.
  - (d) Explain try and catch with example.
  - (e) State the difference between AWT and Swings.

5. Attempt any *four* : [4×4=16]
- (a) Write a short note on interfaces in Java.
  - (b) Java is platform independent. Justify the statement.
  - (c) What is a Listener ? Explain the MouseListener methods.
  - (d) Write a program to count the number of words, lines and characters in a file.
  - (e) Write an awt application that contains a frame and two buttons “Red” and “Blue”. On click of the button give respective color to the frame.



Total No. of Questions—5]

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**[5163]-502**

**B.B.A. (CA) (Sem. V) EXAMINATION, 2017**

**502 : WEB TECHNOLOGIES**

**(2013 PATTERN)**

**Time : Three Hours**

**Maximum Marks : 80**

**N.B. :—** (i) *All* questions are compulsory.

(ii) Figures to the right indicate full marks.

**1.** Solve any *eight* of the following : [8×2=16]

- (a) Explain `<pre>` tag with example.
- (b) Explain `<font>` tag with two attributes.
- (c) Explain global and local variables.
- (d) List any *four* iterator function in array.
- (e) Define `asort( )` function.
- (f) Explain any *two* string functions in JavaScript.
- (g) State the purpose of array-walk function.
- (h) Explain `<a>` and `<div>` tags.
- (i) List box properties in CSS.

**2.** Solve any *four* of the following : [4×4=16]

- (a) Explain in detail array in PHP.

P.T.O.

(b) Write HTML code to design following output for table :

Supplier Name	Product Name	Product Details		Total Price
		Price	Quantity	
Poonam Electronics	Printers	2500	08	20000
Raj Electronics	Scanner	1800	05	9000

(c) Explain the use of <frameset> tag with an example.

(d) Write a note on DOM.

(e) Explain encoding and escaping in PHP.

3. Solve any *four* of the following : [4×4=16]

(a) Explain types of CSS with example.

(b) Explain any *two* dialog boxes used in JavaScript.

(c) Write a PHP script which will find out the character count of a particular character in a string.

(d) Write a PHP script to find sum of digits of a given number.

(e) Explain ordered and unordered list.

4. Solve any *four* of the following : [4×4=16]

(a) Write a JavaScript program to create four button on the webpage. Clicking on button will change the background colour of web page.

(b) Write a PHP script to display the elements along with key for an associative array.

- (c) Explain any *two* HTML form elements.
- (d) Write a note on HTTP.
- (e) Write HTML code to design the following output frame.

BCA	
TYBCA	<ul style="list-style-type: none"><li>• Java</li><li>• Web Tech</li><li>• Oops</li><li>• Dot net</li></ul>

5. Solve any *four* of the following : [4×4=16]
- (a) Write a note on Internet.
- (b) How can user include Image as hyperlink ? Explain with example.
- (c) Explain GET and POST methods with example.
- (d) What are the characteristics of PHP ?
- (e) Explain `sort( )`, `asort( )`, `arsort( )`, `ksort( )` functions.

Total No. of Questions—5]

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**[5163]-503**

**T.Y. B.C.A. (Fifth Semester) EXAMINATION, 2017**

**503 : DOT NET PROGRAMMING**

**(2013 PATTERN)**

**Time : Three Hours**

**Maximum Marks : 80**

**N.B. :—** (i) *All* questions are compulsory.

(ii) *All* questions carry equal marks.

(iii) Draw suitable diagram wherever necessary.

(iv) Design proper GUI.

**1.** Attempt any *eight* of the following :

[8×2=16]

(a) What is difference between Read( ) and ReadLine( ).

(b) How to declare a constant.

(c) Define IDE.

(d) State difference between Value type and Reference type.

(e) How to load picture during runtime.

(f) What is currency manager ?

(g) What is DataAdapter ?

(h) What do you mean by event in VB.Net ? Enlist any *two* Mouse Event.

P.T.O.

(i) Explain about the keyword `must inherit`.

(j) Define exception.

**2.** Attempt the following (any *four*) : [4×4=16]

(a) Explain function overloading and function overriding with example.

(b) Explain features of Dot Net.

(c) Design GUI and write a code for the following :

⇒ Accept a number from an user through `InputBox` and display its multiplication table into the `ListBox`.

(d) Design GUI and write a code for the following :

(Using `ADO.net`) (use `SQL-server` to created b)

⇒ Create a table `player(Pid, Pname, Game, no. of matches)`

⇒ Insert-records into table.

⇒ Display appropriate message in `MessageBox`.

(e) Write a `Vb.Net` program for blinking an image.

**3.** Attempt the following (any *four*) : [4×4=16]

(a) Explain polymorphism in `VB Dot Net`.

(b) Explain destructor with an example.

- (c) Design GUI and write a code for the following in VB.Net :  
⇒ Select color from ComboBox  
⇒ Change font color of TextBox with selected color.
- (d) Write a program which uses a function to check whether a given number is perfect or not using console application.
- (e) Design GUI and write code for the following :  
⇒ Create a table Movie (Mname, Releaseyear, Director)  
⇒ Insert the records (Max : S)  
⇒ Delete the record of movie whose releaseyear is 2014 and display appropriate message in MessageBox.  
(Use MS Access to createdb).

4. Attempt the following (any *four*) : [4×4=16]
- (a) List the components of ADO.Net and explain any *one* in detail.
- (b) Explain InputBox( ) and MsgBox( ) with syntax and example.
- (c) Write a VB.Net program to do the following operations on RichTextBox values :  
(i) Bold  
(ii) Italic  
(iii) Exit.
- (d) Design GUI and write a code for the following in VB.Net :  
⇒ Accept string in TextBox  
⇒ Convert into uppercase or lowercase using Radio Button.
- (e) Define CLR and explain services provided by CLR.

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

[4×4=16]

- (a) Inheritance
- (b) Constructor
- (c) Databinding with ListBox
- (d) Advantages of Dot.Net
- (e) Garbage collection.

Total No. of Questions—5]

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**[5163]-504**

**T.Y. BCA (Fifth Semester) EXAMINATION, 2017**

**504 : OBJECT ORIENTED SOFTWARE ENGINEERING**

**(2013 PATTERN)**

**Time : Three Hours**

**Maximum Marks : 80**

**N.B. :—** (i) All questions are compulsory.

(ii) Neat diagrams must be drawn wherever necessary.

(iii) Figures to the right indicate full marks.

1. Attempt any *eight* of the following :

[8×2=16]

(a) Define Polymorphism.

(b) What is Package ?

(c) What is the purposes of state chart diagram ?

(d) What is meant by object-oriented Analysis ?

(e) Write down the generic components of object-oriented design model.

(f) What is the use of tagged values in UML Diagrams ?

(g) Define joining.

(h) What is Recursive Message ?

(i) Define UML.

(j) What is meant by Elaboration ?

P.T.O.



2. Attempt any *four* of the following : [4×4=16]

- (a) What are the features of UML ?
- (b) What is association relationship ? Explain in detail with role, multiplicity.
- (c) Draw use case diagram for Railway Reservation System.
- (d) What is meant by Iterative Development ? State its various advantages.
- (e) Explain object design process in detail.

3. Attempt any *four* of the following : [4×4=16]

- (a) Explain any *four* 'structural things with well labelled diagram.'
- (b) Explain dependency relationship along with stereotypes.
- (c) Explain Deployment diagram with any *four* notations.
- (d) Define UP ? Explain phases with diagram.
- (e) Explain the Jacobson's method of object-oriented design.

4. Attempt any *four* of the following : [4×4=16]

- (a) Explain class diagram with suitable example.
- (b) Write a short note on "Interaction diagram".
- (c) Explain architecture of UML.
- (d) Explain system design process with diagram.

(e) Define the following terms :

- (i) Transition
- (ii) Instance
- (iii) Actor
- (iv) Realization.

5. Attempt the following : [16]

“Supermarket” is a well known supermarket with a chain of stores. The supermarket accepts payment in cash or through credit card of major Bank. Customers using credit card given the card at the time of purchase and sign the receipt. Once in a week, the billing clerk prepares a statements and forwards it along with the signed slips to the respective Banks. The Bank make payment on statements to statement basis sometimes rejecting some of the slips listed for irregularities. Customer having “Supermarket card” have charge slips for certain amount of purchase. Each time a purchase is made; the balance on the charge slip is updated and authorized. Some customers make purchase using either of the above mentioned facilities.

Consider above situation, draw the following UML diagrams :

- (a) Class Diagram
- (b) Sequence Diagram
- (c) Activity Diagram
- (d) Use Case Diagram.

Total No. of Questions—5]

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**[5163]-601**

**T.Y. B.C.A. (Sixth Semester) EXAMINATION, 2017**

**601 : ADVANCED WEB TECHNOLOGIES**

**(2013 PATTERN)**

**Time : Three Hours**

**Maximum Marks : 80**

**N.B. :—** (i) *All* questions are compulsory.

(ii) Figures are required wherever necessary.

**1. Attempt the following (any *eight*) :** [8×2=16]

- (a) Explain the purpose of \$ this variable.
- (b) Name any *two* functions to extract basic information about classes in PHP.
- (c) Name any *two* variables of \$\_SERVER array.
- (d) How to check whether a variable is set with the session ?
- (e) Name any *two* parameter of MySQL\_connect( ).
- (f) List any *two* PHP HTTP function.
- (g) Name any *two* elements of XML document structure.
- (h) Enlist the PHP DOM's function.
- (i) Which are the parts of XML-RPC ?
- (j) Give any *two* applications of AJAX.

**2. Attempt the following (any *four*) :** [4×4=16]

- (a) What is Interospection ? Explain any *two* interospective function.

P.T.O.

- (b) What is sticky form ? Explain with example.
  - (c) Explain how to create and select database using PHP.
  - (d) Write a php program to upload the file and display its information (use \$\_FILES).
  - (e) Define an Interface which has methods area( ), volume( ), define constant PI. Create a class cylinder which implements this (use define( )).
- 3.** Attempt the following (any *four*) : [4×4=16]
- (a) Explain WSDL document structure.
  - (b) Explain the features of XML.
  - (c) Write a php program to accept two strings from user and check whether entered strings are matching or not (use sticky form concept).
  - (d) Write a php program to capitalize of first letter of each name and check user email address contain @ symbol.
  - (e) Write php script to create CD catalog using XML file.
- 4.** Attempt the following (any *four*) : [4×4=16]
- (a) Explain cookie with example.
  - (b) Explain XML DOM with example.
  - (c) Explain web services.
  - (d) Write a Ajax program to display list of games stored in an array on clicking OK button.
  - (e) Write a php program to implement create, read, update and display operation on employee table with attributes (eno, ename, date\_of\_join).

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

[4×4=16]

- (a) XML document structure
- (b) Setting response header
- (c) Link CSS with XML
- (d) UDDI
- (e) Ajax web application model.

Total No. of Questions—5]

[Total No. of Printed Pages—3

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**[5163]-602**

**B.C.A. (Sixth Semester) EXAMINATION, 2017**

**602 : ADVANCE JAVA**

**(2013 PATTERN)**

**Time : Three Hours**

**Maximum Marks : 80**

**N.B. :—** (i) *All* questions are compulsory.

(ii) Figures to the right indicate full marks.

(iii) Answer of sub-questions of each question should be attempted at one place. It should not be written separately.

**1.** Attempt the following (any *eight*) : [8×2=16]

(a) Write any *four* ResultSet functions with syntax ?

(b) What is servlet config object ?

(c) What is use of cookies ?

(d) What is socket ?

(e) What are common JDBC Exceptions ?

(f) What is use of Runnable interface ?

(g) What is marshalling and demarshalling ?

(h) Explain thread priority.

(i) What is use of accept() method ?

(j) What is Remote object ?

P.T.O.

2. Attempt the following (any *four*) : [4×4=16]

(a) What is difference between GET and POST method ?

(b) Explain thread life cycle with suitable diagram.

(c) Explain methods of ServerSocket class with syntax.

(d) Write servlet program to display Hit count.

(Hint : Hit count is number of times page visited)

(e) Write JDBC program to delete records from employee table whose designation is 'Manager'.

(Employee table structure : Empid, name, desig, dept)

3. Attempt the following (any *four*) : [4×4=16]

(a) What is manifest file ? Explain its usage.

(b) What is difference between execute(), execute Query() and execute Update() ?

(c) Write multithreading program to display drawing flag on the Applet container.

(d) Explain steps for creating a TCP connection between two computers using socket.

(e) What are different methods of session management in servlet ?

4. Attempt the following (any *four*) : [4×4=16]

(a) What are different types of JDBC Drivers ?

(b) Explain RMI architecture with suitable diagram.

(c) Explain thread synchronization with suitable example.

- (d) Write JSP program to validate user name, where user name should not be left blank and it should contain characters only.
- (e) Write JDBC program to insert record in student table ? (fields of student table are rollno, name, date of birth, address)

5. Attempt the following (any *two*) : [2×8=16]

- (a) Write a socket program to accept file name from client, check whether this file is available on server or not. If it is available then display its content on clients machine changing its case, otherwise display an error message.

*Or*

- (b) Write socket based client and server program to accept a number from client, read this number at server and if this number is prime then revert it to client.
- (c) Write JSP program to accept student roll number and if this rollnumber exists in database then delete it from student table. (take suitable structure of student table).

*Or*

- (d) Write servlet program to accept name of city from where employee belongs and display all records from employee table who belongs to that city in tabular format. (take suitable structure of Employee table).



Total No. of Questions—5]

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**[5163]-603**

**BCA (Sem. VI) EXAMINATION, 2017**

**603 : RECENT TRENDS IN IT**

**(2013 PATTERN)**

**Time : Three Hours**

**Maximum Marks : 80**

**N.B. :—** (i) *All* questions are compulsory.

(ii) *All* questions carry equal marks.

(iii) Draw a neat diagram whenever necessary.

**1.** Solve the following :

[8×2=16]

- (a) What is software metrics ?
- (b) Define the term LOC.
- (c) List the large object.
- (d) Define the term DDBMS.
- (e) What is Data Cube Technology ?
- (f) What is Data Integration ?
- (g) What is Security Attack ?
- (h) Define the term Digital Signature.

**2.** Answer the following (any *four*) :

[4×4=16]

- (a) Describe types of requirement in detail.
- (b) What is fragmentation ? Describe its types in detail.

P.T.O.

- (c) What are the advantages and disadvantages of Object Relational Database system ?
- (d) Explain the concept of DES algorithm in detail.
- (e) What is Computing ? Describe types of computing.

**3.** Answer the following (any *four*) : [4×4=16]

- (a) Write on advantages and disadvantages of prototyping model.
- (b) Describe need and characteristics of cloud computing.
- (c) Describe components of Data Warehouse in detail.
- (d) Describe Architecture of Data Mining.
- (e) Write on Role of Requirement Analysis in Software Process.

**4.** Answer the following (any *four*) : [4×4=16]

- (a) Write on Complexity metrics in detail.
- (b) Describe advantages and disadvantages of Data Replication.
- (c) Explain star schema for Data Warehouse.
- (d) What is Data Mining ? Describe its advantages and disadvantages.
- (e) Describe advantages and disadvantages of mobile computing.

5. Answer the following (any *four*) : [4×4=16]

- (a) Describe software quality assurance in detail.
- (b) Write on client server base architecture of Database System.
- (c) Write on functionalities of Data Mining in detail.
- (d) Differentiate private key and public key cryptography.
- (e) What is Green Computing ? What are the reasons of using green computing ? Describe its objectives.

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[5163]-604

T.Y. B.C.A. (Sixth Semester) EXAMINATION, 2017

604 : SOFTWARE TESTING

(2013 PATTERN)

Time : Three Hours

Maximum Marks : 80

*N.B.* :— (i) All questions are compulsory.

(ii) Figures to the right indicate full marks.

1. Attempt the following (any *eight*) : [2×8=16]
- (1) Define indicator.
  - (2) State the objective of testing.
  - (3) Define failure and defect.
  - (4) What is a module ?
  - (5) Explain TSL.
  - (6) State and explain drawbacks of big-bang approach of testing.
  - (7) What is a stub module ?
  - (8) Define regression testing.
  - (9) Define verification testing.
  - (10) What is sandwich approach of integration testing ?

P.T.O.

2. Attempt any *four* of the following : [4×4=16]

- (1) Differentiate between alpha and beta testing.
- (2) Explain equivalence class partitioning.
- (3) Explain in detail the testability factor of software.
- (4) Explain J unit as a testing tool in detail.
- (5) Explain the testing of help facilities.

3. Attempt any *four* of the following : [4×4=16]

- (1) Explain any *four* testing principles in detail.
- (2) Explain testing cycle with diagram.
- (3) Explain vertical approach of top-down integration i.e. depth-first approach.
- (4) Explain size-oriented metrics with example.
- (5) Explain inter-task testing with example.

4. Attempt any *four* of the following : [4×4=16]

- (1) Explain path coverage criteria of white-box testing.
- (2) Explain testing of client-server architecture.
- (3) Explain cyclometric complex. Give an example to calculate and find independent paths through cyclometric complexity.
- (4) Give difference between load and stress testing.
- (5) Explain Load Runner as a testing tool.

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

[4×4=16]

- (1) Gray-Box testing
- (2) Statement coverage criteria of White-Box testing
- (3) Win Runner
- (4) Security testing
- (5) Rational Robot