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[5363]-101

**B.C.A./B.B.A. (CA) (Sem. I) EXAMINATION, 2018**

**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 diagram wherever necessary.

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

(a) What is Computer ?

(b) Define volatile memory.

(c) Write any *two* examples of non-impact printers.

(d) Write the following :

(i) 1MB = (?) KB

(ii) 1GB = (?) MB

(e) Define flowchart.

(f) State any *two* characteristics of an algorithm.

(g) Write any *two* types of network.

(h) Write any *two* chart types in MS-Excel.

(i) Define Compiler.

(j) Write full form of :

(i) PROM

(ii) EPROM

P.T.O.

2. Attempt any *four* : [16]
- (a) Explain applications of computer in various fields.
  - (b) Write a note on CPU.
  - (c) Write a note on Mouse.
  - (d) Differentiate between primary and secondary memory.
  - (e) Write an algorithm to find out factorial of given number.
3. Attempt any *four* : [16]
- (a) Write a note on windows operating system.
  - (b) Explain star and mesh topology.
  - (c) Write a note on MS-PowerPoint.
  - (d) Differentiate between application software and system software.
  - (e) Write a note on Internet.
4. Attempt any *four* : [16]
- (a) Explain magnetic tape in detail.
  - (b) Write a note on MS-Word.
  - (c) Write a note on Plotter.
  - (d) Explain real time operating system.
  - (e) Explain any *four* functions used in MS-Excel.
5. Attempt any *four* : [16]
- (a) Write a note on MS-Access.
  - (b) Write a note on fiber optic cable.
  - (c) Draw a flowchart for finding the sum and average of  $n$  numbers.
  - (d) Compare between windows and linux operating system.
  - (e) Write a note on inkjet printer.

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[5363]-102

**B.C.A./BBA (CA) (Sem. I) EXAMINATION, 2018**

**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 important functions of Accounting. [16]

*Or*

What do you mean by Accounting Principles ? Explain the important characteristics of accounting principles. [16]

2. Journalise the following transactions in the books of M/s Moumita Aiyar, Pune for March, 2015 : [16]

1. Purchased Goods for cash Rs. 11,500.
3. Paid electricity charges Rs. 150.
5. Received Rs. 600 from Chunchunwala as Commission.
6. Sold a scooter to Jhunjhunwala for Rs. 910.
7. Received Rs. 100 from Gungunwala.
11. Paid Transport charges Rs. 350 to Disha
13. Purchased machinery Rs. 7,200 from Madhubani Bros.
15. Deposited Rs. 1,200 in Bank of Maharashtra.

P.T.O.

3. Enter the following transactions in the cash book of BolBol having cash with cash and bank column for March, 2015 : [16]
1. Cash in hand Rs. 400 and bank Rs. 1,000.
  2. Sold Goods to Suresh for Rs. 600 and received Rs. 400 in part payment.
  5. Transferred Rs. 500 from private bank account to Business Bank Account.
  10. Issued a cheque of Rs. 200 to Bharat Bansode Furniturre Works for the furniture purchased in the month of Feb. 2015.
  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 and Company informed that they paid directly into our bank account, the remaining balance account 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 and Sons for Rs. 500 and deposited into the bank account immediately.
  23. Cheque received from M/s Manik and Sons 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 Sandhya on 31st March 2015. You are required to prepare a Trading and Profit and Loss Account and Balance Sheet on that date : [16]

**Trial Balance as on 31st March, 2015**

Particulars	Debit Rs.	Particulars	Credit Rs.
Salaries	16,965	Capital	80,000
Wages	34,965	S. Creditors	54,300
Manufacturing Exp.	10,455	Bank Overdraft	10,000
Carriage Inward	980	Purchase Return	1,000
Carriage Outward	2,150	Sales	2,56,850
Plant and Machinery	19,720	Provision for Bad debts	2,000
Furniture	9,480		
Land	25,000		
Goodwill	30,000		
Insurance	4,175		
Fuel and Power	1,276		
S. Debtors	78,140		
Factory Lighting	986		
Opening Stock	34,170		
Sales Return	3,170		
Purchases	97,165		
Discount	928		
Interest	475		

Bad Debts	1,485	
Cash	145	
Bank	7,540	
General Expenses	8,142	
Motor Car	5,165	
Selling Expenses	2,473	
	3,94,150	3,94,150

*Adjustments :*

- (i) Stock on 31st March, 2014 was Rs. 29,630.
- (ii) Depreciation is to be charged on Plant and Machinery at 10%, Land 5% and Motor Car Rs. 1,000.
- (iii) Write off Rs. 140 as bad debts.
- (iv) Provide 2% discount on debtors and 10% on creditors.
- (v) Sales outstanding Rs. 235.

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

- (i) Limitations of Computerised Accounting
- (ii) Company Final Accounts
- (iii) Accounting Packages
- (iv) Accounting Standards
- (v) User of Accounting Information
- (vi) Advantages of Accounting.

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[5363]-103

**B.C.A./BBA (CA) (Sem. I) EXAMINATION, 2018**

**113 : PRINCIPLES OF PROGRAMMING AND ALGORITHMS  
(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 (*All*) : [8×2=16]
- (a) Explain the term efficiency of algorithm.
  - (b) What is big O Notation ?
  - (c) Explain the terms Upper and Lower. Triangular Matrix.
  - (d) What is Searching ?
  - (e) What is initialization of variable ?
  - (f) What is flow chart ?
  - (g) What is Bubble Sort ?
  - (h) List types of arrays.
2. Answer the following (any *four*) : [4×4=16]
- (a) Explain any *one* problem solving technique.
  - (b) Compare linear search and binary search.
  - (c) Explain symbols in flow charting.
  - (d) Write an algorithm to calculate simple interest.
  - (e) Draw a flow chart to print a table of given no.

P.T.O.

3. Answer the following (any *four*) : [4×4=16]
- (a) What is dimension and index of an array.
  - (b) Explain searching and list the types of searching.
  - (c) What is an algorithm ? State its advantages.
  - (d) Write an algorithm to find factors of given No.
  - (e) Draw a flow chart to find sum of first N even numbers.
4. Answer the following (any *four*) : [4×4=16]
- (a) Explain Binary search with example.
  - (b) Explain the concept of recursion.
  - (c) Write an algorithm to display prime nos. between 1 to 100.
  - (d) Draw a flow chart to find the given year is leap year or not.
  - (e) Draw a flow chart to calculate area of circle.
5. Answer the following (any *four*) : [4×4=16]
- (a) List sorting techniques and explain any *one*.
  - (b) Explain program development life cycle.
  - (c) Draw a flowchart for finding average of *n* given numbers.
  - (d) Write an algorithm to find maximum of an array.
  - (e) Write an algorithm to find out given no. is even or odd.

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[5363]-104

**B.C.A./B.B.A. (CA) (Sem. I) EXAMINATION, 2018**

**BUSINESS COMMUNICATION**

**(2013 PATTERN)**

**Time : Three Hours**

**Maximum Marks : 80**

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

(ii) All questions carry equal marks.

1. What is Written Communication ? Explain merits and limitations of Written Communication.
2. Define Art of Listening. Explain Barriers to Listening.
3. What is Business Letters ? Explain in detail essentials of Business letters.
4. (a) Write a circular letter to their clients from M/s Akash & Company, Dhule for shifting office in new place.  
(b) Write a complaint letter to Rakesh Electronic Limited, Mumbai for sending wrong goods.
5. What is Non-verbal Communication ? Discuss advantages and limitations of Non-verbal Communication.

P.T.O.

6. Distinguish between Telegram and Voice mail.
7. Write short notes on (any *four*) :
- (a) Process of Communication
  - (b) Contents in Report
  - (c) Layout of business letters
  - (d) Contents in Job application letter
  - (e) Sales letters
  - (f) Overcoming Barriers to Communication.

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[5363]-105

**B.C.A./B.B.A. (CA) (Sem. I) EXAMINATION, 2018**

**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. Define Planning ? Explain types of planning in detail.

*Or*

What is Management ? Describe nature of management.

2. What is Co-ordination ? Explain types of co-ordination.

*Or*

What is Staffing ? Explain the process of staffing.

3. Write short notes on :

(a) Management as a profession

(b) Leadership styles.

*Or*

What is Delegation ? Describe the steps of Delegation.

4. Explain Maslow's Need Hierarchy theory of Motivation.

P.T.O.

*Or*

What is Decision-Making ? Describe approaches to strategic decision making.

5. Write short notes on (any *four*) :
- (a) Resistance to Change
  - (b) Total Quality Management (TQM)
  - (c) Stress Management
  - (d) Social Responsibility of Management
  - (e) Importance of Controlling.

Total No. of Questions—4]

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[5363]-201

B.C.A./BBA (CA) (Sem. II) EXAMINATION, 2018

201 : PROCEDURE ORIENTED PROGRAMMING USING 'C'  
(2013 PATTERN)

Time : Three Hours

Maximum Marks : 80

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

(ii) Neat diagram must be drawn wherever necessary.

(iii) Use Ansi C method.

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

[10×2=20]

- (a) What are various datatypes used in C ?
- (b) Define keyword.
- (c) State any *four* types of statements in C.
- (d) Define recursion and give its advantage.
- (e) What do you mean by scope of a variable ?
- (f) What is structure ?
- (g) Write down what do you mean by command line argument.
- (h) Define string with example.
- (i) What are limitations of Array ?
- (j) Define file. State types of file.
- (k) What is the difference between malloc( ) and calloc( ) ?
- (l) What is generic pointer in C ?

P.T.O.

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

- (a) How can array be passed to function ? Explain with example.
- (b) Discuss file opening modes in detail.
- (c) Define structure. What do you mean by Nested structure ? Explain with example.
- (d) Explain function getchar and putchar with example.
- (e) Explain the working of break and continue statements in C-language with example.

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

- (a) Write a C program to read an integer, find the sum of digits of a given integer using recursive function.
- (b) Write a program to generate Fibonacci series upto first 20 numbers.
- (c) Write a C program to find the largest number from 3×3 matrix.
- (d) Write a C program to copy contents of one file to another file.
- (e) Write a C program to generate the following output :

```
1
2 2
3 3 3
4 4 4 4
5 5 5 5 5
```

4. Trace the output and justify (any *four*) :

[4×5=20]

(a) # include <stdio.h>

```
main( )
{
int arr[ ] = {0, 1, 2, 3, 4};
int i, * ptr;
for (ptr = arr +4) i = 0; i ≤ 4; i++)
printf ("%d", ptr [--i]);
}
```

(b) main( )

```
{
char * a[5] = {"GOOD", "BAD", "UGLY", "WICKED", "NICE"};
printf ("% s\n", a[0]);
printf ("% s\n", * (a+2));
printf ("% c\n", * (a[2]+2));
printf ("% s\n", a[3]);
printf ("% c\n", * (a[3]+2));
}
```

(c) main( )

```
{
int i = 4;
switch (i)
{
case 2 : printf ("Two"); break;
case 2+2 : printf ("Four ?"); break;
default : printf ("Try Again");
}
```

```

(d) # define SQR (X) (X*X)
int main( )
{
int a, b = 3;
a = SQR (b+2);
printf ("% a\n", a);
return (0);
}

(e) main( )
{
static char str[ ] = "Malayalam";
char * s;
s = str + 8;
while (s > = str)
{
printf ("% c", * s);
s --;
}
}

```

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**[5363]-202**

**BCA/B.B.A. (CA) (Sem. II) EXAMINATION, 2018**

**202 : DATABASE MANAGEMENT SYSTEM**

**(2013 PATTERN)**

**Time : Three Hours**

**Maximum Marks : 80**

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

(ii) Draw neat diagrams wherever necessary.

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

- (a) State and explain the advantages of DBMS.
- (b) What are logical and physical files ?
- (c) Explain the views of Database Management System.
- (d) Explain the different DBMS and RDBMS used in the Industry.
- (e) Explain Primary key and Foreign key with example.

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

- (a) Explain the various DML commands with examples.
- (b) Explain the syntax of ALTER Table.
- (c) Explain union and difference in Relational algebra with suitable example.
- (d) What is Normalization ? Explain 1NF with suitable example.
- (e) Explain sparse index.

P.T.O.

3. Attempt the following : [16]

Consider the following entities and their relationship :

Game (gno, gname, no-of-player, coachname)

Player (pno, pname)

Game and player are related with many-to-many relationship

Create RDB in 3NF and solve the following queries using SQL  
(any *five*) :

- (a) Delete a row from Game table for game "Cricket"
- (b) Display all players who play game "Table Tennis"
- (c) List all games played by Rajesh
- (d) Add column Age in the player table
- (e) Count total no. of players whose coach is "Kiran"
- (f) Count max no. of players in a game.

4. Write short notes on (any *four*) : [4×4=16]

- (a) Explain Insert Anomalies with example.
- (b) Aggregation and Generalization.
- (c) Order by and Group by.
- (d) Entity, attribute, superkey, tuple.
- (e) Sequential file organization.

5. Attempt the following : [2×8=16]

(a) Consider the below

INVOICE

Hilltop Animal Hospital

Date : Jan. 14 2018

Invoice No. 97

Mr. Richard Cook

490 This Street

England

<b>PET</b>	<b>Procedure</b>	<b>Amount</b>
Rover	Rabbies Vaccination	400=00
Morris	Rabbies Vaccination	700=00
	Total	<u>1100=00</u>
	Tax (10%)	110=00
	Amount Owing	<u>1210=00</u>

Normalize the above case upto 3 NF.

(b) Consider the database and write relational algebraic expression  
Patient Master (PatientNo. PatientName, Sex, Address City,  
Allergy, Chief Complaints)

(i) Display all patients whose Allergy is “Nimesulide”

(ii) Display all male patients from city Calcutta.

(iii) Update all patients whose sex is “M” with “Male”.

(iv) List all patients whose chief complaint is “fever”.

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[5363]-203

B.C.A./BBA (CA) (Sem. II) EXAMINATION, 2018

ORGANISATIONAL BEHAVIOUR

(2013 PATTERN)

Time : Three Hours

Maximum Marks : 80

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

(ii) Figures to the right indicate full marks.

1. Define Organizational Behaviour. Explain the nature, scope and goals of Organizational Behaviour. [15]

*Or*

What is 'Total Quality Management' ? Describe the goals of TQM. How is TQM implemented ? [15]

2. What is Attitude ? Explain effect of employee's attitudes. [15]

*Or*

Explain Herzberg's Hygiene theory of motivation. [15]

3. Define Personality. Explain determinants of personality. [15]

*Or*

Define Stress. Explain in detail sources of Stress. [15]

4. Define the term Conflict. Explain types of conflict. [15]

*Or*

What is Resistance to Change? Explain its types. [15]

P.T.O.

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

- (a) Autocratic and custodial model of Organizational Behaviour
- (b) Organizational Value
- (c) Locus of Control
- (d) Psychological effects of Stress
- (e) Positive effects of Conflict
- (f) Types of Group.

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[5363]-204

F.Y. B.B.A./B.C.A. (CA) (Second Semester) EXAMINATION, 2018

204 : COMPUTER APPLICATION 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 Addition and Multiplication Principle of counting.

(b) How many three digit numbers can be formed from the digits 2, 4, 5, 8, 9 if each digit is to be used only once ? How many of these are divisible by 5 ?

(c) Define mutually exclusive events and exhaustive events.

(d) There are 10 professors and 20 students. Out of these a committee of 2 professors and 3 students is to be formed. In how many ways can it be done ?

P.T.O.

- (e) Determine which of the following are deterministic and non deterministic experiments :
- (i) The no. of customers entering a post office in a day.
  - (ii) Cooling water below 0 degrees Celsius.
  - (iii) Rolling of a die.
  - (iv) Gender of a new born baby is recorded in a hospital.
- (f) Find  $n$  if  ${}^n P_4 = 10 * {}^n P_3$ .

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

- (a) Explain the following terms.
- (i) Sample space
  - (ii) Elementary event
- (b) The letters of the word 'ARTICLE' are arranged at random. Find the probability that the vowels occupy the even places.
- (c) If  $P(A) = 0.6$ ,  $P(B) = 0.5$ ,  $P(A \cap B) = 0.3$  Compute
- (i)  $P(A \cup B)$
  - (ii)  $P(A' \cap B)$
  - (iii)  $P(A' \cup B')$
  - (iv)  $P(A' \cap B')$ .
- (d) Define Discrete Uniform distribution. State its mean and variance.
- (e) Write sample space for the following experiments.
- (i) No. of tossing of a dice is recorded, when it is tossed until 6 occurs.

- (ii) T.V. viewers were asked to give ratings to 3 programs
- (iii) A two digit number is formed from the digits 4, 5, 6 using each digit only once.
- (iv) Answers to an objective question which has 4 multiple choices A, B, C, D. Student ticks a single answer.
- (f) In a basket there are 5 mangoes and 4 oranges. If any 3 fruits are to be selected from these, find number of possibilities which :
  - (i) At least one mango is selected.
  - (ii) Exactly two mangoes are selected.

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

- (a) Explain classical definition of probability. Also state addition theorem of probability.
- (b) If X follows Binomial distribution with parameters  $n = 6$  and  $p = 1/3$ . Find :
  - (i)  $P(X \leq 5)$
  - (ii)  $P(X > 4)$ .
- (c) Suppose A and B are mutually exclusive events for which  $P(A) = 0.3$ ,  $P(B) = 0.5$ . What is probability that ?
  - (i) Either A or B occurs
  - (ii) A occurs but B does not occur
  - (iii) Both A and B occur
  - (iv) Neither A nor B occurs

- (d) Let  $x$  follows Binominal distribution with parameters  $n$  &  $p$ :
- (i) Find  $n$  &  $p$  if  $E(x) = 6$  and  $\text{Var}(x) = 4.2$
- (ii) If  $P = 0.6$  and  $E(x) = 6$ , find  $n$  and  $\text{Var}(x)$
- (e) Define :
- (i) Independence of events
- (ii) Impossible event.
- (f) Define Binominal Distribution. State its mean and variance

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

- (a) Suppose a card is drawn at random from a pack of 52 playing cards. Let event A = getting a spade card, B = getting a king. Are A and B independent ?
- (b) Explain merits and demerits of simulation.
- (c) Compute 4 random numbers using linear congruential generator  $X_{i+1} = (5X_i + 3) \text{ mod } 8$  with  $X_0 = 8$ .
- (d) Write a note on Pseudo random number generator.
- (e) A box contains 20 light bulbs of which 6 are defective. 4 light bulbs are chosen at random from the box. Find probability that :
- (i) None is defective
- (ii) Exactly 1 is defective.
- (f) Define Bernoulli distribution. State its mean and variance.

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

- (a) At a garage number of cars arrived for repairs (X) is a random variable having Binomial distribution with parameters  $n = 10$  and  $p = 0.6$ . Simulate number of cars coming for repairs on 5 days. (Use calculator to generate random numbers.)
- (b) The daily demands for the items with associated probabilities are given below :

Daily demand	Probability
0	0.01
15	0.15
25	0.20
35	0.50
45	0.12
50	0.02

Simulate demand for next 8 days using random numbers 21, 27, 47, 54, 60, 39, 43, 25.

- (c) A Certain company encourages its employees to participate in Cricket and Hockey. A survey indicates that 40% play Cricket, 50% play Hockey and 25% play Cricket and Hockey both. Find probabilities of the following events :
- (i) An employee plays only Hockey
- (ii) An employee plays only Cricket
- (iii) An employee takes part in at least one of the games, cricket and hockey
- (iv) An employee does not play either game.

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[5363]-205

BCA/B.B.A. (CA) (Sem.-II) EXAMINATION, 2018

205 : E-COMMERCE CONCEPTS

(2013 PATTERN)

Time : Three Hours

Maximum Marks : 80

1. Answer the following : [2×8=16]
- (a) Define domain name.
  - (b) What is Router ?
  - (c) What is extranet ?
  - (d) What is a worm ?
  - (e) Define digital signature.
  - (f) State technical components of E-commerce.
  - (g) What is E-business ?
  - (h) What is B2C ?
2. Attempt any *four* : [4×4=16]
- (a) Explain factors affecting website cost.
  - (b) Explain model of symmetric encryption.
  - (c) Explain main activities of E-commerce.
  - (d) Explain steps of development of intranet.
  - (e) Explain phishing techniques in detail.

P.T.O.

3. Attempt any *four* : [4×4=16]
- (a) Explain E-payment tools.
  - (b) Explain target of E-mail in detail.
  - (c) Explain benefits of E-commerce.
  - (d) Explain disadvantages of symmetric key encryption.
  - (e) Explain risks associated with denial of service attacks.
4. Attempt any *four* : [4×4=16]
- (a) Explain premium sms based transactional payments.
  - (b) What is ATM ? Explain its limitations.
  - (c) What is internet service provider ? Explain types of internet service provider.
  - (d) Explain any *two* types of payment cards.
  - (e) Differentiate between intranet and extranet.
5. Write short notes on (any *four*) : [4×4=16]
- (a) B2B
  - (b) Banner exchange
  - (c) Direct mobile billing
  - (d) Digital envelopes
  - (e) E-mail phishing.

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[5363]-301

**B.C.A/B.B.A. (CA) (III Semester) EXAMINATION, 2018**

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

**(2013 PATTERN)**

**Time : Three Hours**

**Maximum Marks : 80**

*N.B.* :— (i) Neat diagrams must be drawn wherever necessary.

(ii) Figures to the right indicate full marks.

(iii) All questions carry equal marks.

(iv) All questions are compulsory.

**1. Attempt all :** [8×2=16]

(a) What is PL/SQL ? List the sections of a PL/SQL block.

(b) What is RDBMS ? List any *four* characteristics of RDBMS.

(c) Define :

(i) Upgrading

(ii) Downgrading.

(d) What is Schedule ? List the types of Schedule.

(e) What is procedure in PL/SQL ? Give syntax of procedure.

P.T.O.

- (f) Define :
- (i) Redo
  - (ii) Undo.
- (g) What are the different types of storage ? Give example.
- (h) Define :
- (i) Logical error
  - (ii) System error.

2. Attempt any *four* : [4×4=16]

- (a) Explain advantages and disadvantages of RDBMS.
- (b) What is cursor ? Explain various attributes of cursor.
- (c) Explain recoverable schedule and cascadeless schedule with example.
- (d) What is Deadlock ? Explain how deadlock is handled.
- (e) Explain immediate database modification technique in detail with example.

3. Attempt any *four* : [4×4=16]

- (a) What is transaction ? Explain the states of transaction with the help of diagram.
- (b) What is Log ? Explain log-based recovery.
- (c) Write a note on package in PL/SQL.
- (d) Explain two-phase locking protocol with example.
- (e) Explain remote backup system with the help of diagram.

4. Attempt any *four* : [4×4=16]

(a) Consider the following relational database company (cno, cname, ccity, cshare\_value)

Person (Pno, Pname, Pcity, Pph.no)

Company-person (Cno, Pno, no-of-shares).

Write a function which will return total number of companies from given city.

(b) Consider the following relational database :

Employee (eno, ename, city, deptname)

Project (pno, pname, status)

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

Write a trigger that restricts insertion or updation of records having no-of-days less than zero.

(c) Consider the following relational database customer (cno, cname, ccity, mob-no.)

Loan (lno, loan-amt, no-of-years, cno).

Write a cursor to display details of customer and their loan who have taken loan for more than 10 years.

(d) Consider the following relational database :

Patient (Pno, Pname, Paddr)

Doctor (Dno, Dname, Daddr, city)

Patient-Doctor (Pno, Dno, disease, no-of-visits)

Write a procedure which will display doctor details who is treating the diabetes patient.

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

Write a procedure which will display first n numbers using for loop.

Write a function which will return cube of a given number.

5. Attempt any *four* : [4×4=16]

- (a) Consider the following transactions. Find out two non-serial schedules that are serializable :

T <sub>1</sub>	T <sub>2</sub>
Read (P)	Read (Q)
P = P * 10	Q = Q + 10
Write (P)	Write (Q)
Read (Q)	Read (R)
Q = Q/10	R = R * 10
Write (Q)	Write (R)

- (b) Consider the following transactions. Find out two non-serial schedules that are serializable :

T <sub>1</sub>	T <sub>2</sub>
Read (x)	Read (x)
x = x + 1000	x = x - 1000
Write (x)	Write (x)
Read (y)	Read (y)
Read (z)	y = y - 2000

$y = y + 2000$	Write ( $y$ )
Write ( $y$ )	
$z = z + 3000$	
Write ( $z$ )	

- (c) The following is the list representing the sequence of events in an interleaved execution of set  $T_1, T_2, T_3$  and  $T_4$  assuming two-phase locking protocol.

Is there a deadlock ? If yes, which transactions are involved in deadlock ?

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

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

Time	Transaction	Code
t <sub>1</sub>	T <sub>1</sub>	Lock (A,X)
t <sub>2</sub>	T <sub>2</sub>	Lock (B,S)
t <sub>3</sub>	T <sub>3</sub>	Lock (A,S)
t <sub>4</sub>	T <sub>4</sub>	Lock (C,S)
t <sub>5</sub>	T <sub>1</sub>	Lock (C,X)
t <sub>6</sub>	T <sub>2</sub>	Lock (B,X)
t <sub>7</sub>	T <sub>3</sub>	Lock (D,X)
t <sub>8</sub>	T <sub>4</sub>	Lock (D,S)

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

[Start-Transaction, T<sub>1</sub>]

[Write-item, T<sub>1</sub>, X, 2000]

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

[Check point]

[Start-Transaction, T<sub>4</sub>]

[Write-item, T<sub>4</sub>, X, 3000]

[Write-item, T<sub>4</sub>, Y, 2000]

[Commit, T<sub>4</sub>]

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

[Write-item, T<sub>2</sub>, Z, 2000]

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

[Write-item, T<sub>3</sub>, X, 3000] ← System crash

If deferred update technique with check point is used, what will be the recovery procedure ?

Total No. of Questions—5]

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[5363]-302

**B.C.A./B.B.A. (CA) (Semester-III) EXAMINATION, 2018**

**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) State the types of graph.

(b) Define Data Structure.

(c) How to measure performance of an Algorithm.

(d) How to calculate count of Best, Worst and Average case ?

(e) What is Ancestor of Node ?

(f) What is ADT for an array ?

(g) What is searching ?

(h) What are the operations we can perform on queue ?

(i) State the difference between Stack and Linked List.

(j) What is Pointer to Pointer ?

P.T.O.

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

- (a) What is the difference between array and structure ?
- (b) Explain BFS traversing technique with an example.
- (c) Sort the following data by using bubble sorts techniques :  
56, 23, 98, 67, 3, 87, 45, 77, 99
- (d) Write a 'C' program for addition of two polynomials.
- (e) Write a function to merge given two singly linked lists.

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

- (a) Explain quick sort technique with an example.
- (b) Explain different types of Dynamic Memory Allocation Functions.
- (c) Explain different types of Asymptotic notation in detail.
- (d) Write a function to reverse a singly linked list.
- (e) Explain Prim's algorithm for minimal spanning tree.

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

- (a) Write a function to create and display circular singly linked list.
- (b) What is Graph ? Explain Adjacency list of graph.
- (c) Write a function to count the number of leaf and non-leaf nodes in a tree (Recursive functions).

- (d) What is an Algorithm ? Explain its characteristics in detail.
- (e) Write a function to check whether a given string is palindrome or not (use stack).

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

- (a) Write an algorithm for evaluation of prefix expression.
- (b) Write a function to remove last node of singly linked list and add it at the beginning of linked list.
- (c) Sort the following data by using Insertion sort techniques :  
87, 45, 12, 90, 67, 54, 34, 23, 60
- (d) What is circular queue ? Explain it with an example.
- (e) Write the recursive functions to traverse a tree by using inorder(), preorder() and postorder() traversing techniques.

Total No. of Questions—5]

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[5363]-303

**B.B.A. (CA)/B.C.A. (Semester-III) EXAMINATION, 2018**

**INTRODUCTION TO OPERATING SYSTEM**

**(2013 PATTERN)**

**Time : Three Hours**

**Maximum Marks : 80**

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

(ii) *Neat diagram must be drawn wherever necessary.*

1. Attempt any *eight* of the following :

[8×2=16]

- (a) What is Semaphores ?
- (b) What is Process ?
- (c) What is the purpose of command interpreter ?
- (d) Define Burst Time.
- (e) Define Swap Time.
- (f) What is Deadlock.
- (g) Define System Program.
- (h) Define Rollback.
- (i) What is Turn-Around Time ?
- (j) What is CUP-I/O Brust Cycle ?

P.T.O.

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

- (a) List and explain system calls related to process and job control.
- (b) Describe solution for critical section problem.
- (c) Explain multilevel feedback queue algorithm.
- (d) Explain different methods for recovery from a deadlock.
- (e) Consider the following set of processes with the length of CPU Burst Time and Arrival Time :

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

Calculate turn around time, waiting time, average turn around time, average waiting time using FCFS CPU scheduling algorithm.

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

- (a) Explain medium term scheduler.
- (b) Explain Direct Access method with advantages and disadvantages.
- (c) Explain the dirty bit concept.
- (d) Explain process states in detail.
- (e) Consider the following page reference string :

7, 5, 4, 9, 4, 7, 8, 5, 3, 4, 7, 9, 7, 4

Find the number of page fault for the following algorithm with 3 frames :

- (i) FIFO
- (ii) MFU.

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

- (a) Explain the reader's writer's problem which is a classical problem of synchronization.
- (b) Explain free space management of file system in detail.
- (c) Describe I/O Hardware with its type of I/O devices.
- (d) What is fragmentation ? Explain types of fragmentation in details.
- (e) Consider the following Job queue :

<b>Job</b>	<b>Memory</b>	<b>Time</b>
01	100 K	8
02	90 K	3
03	30 K	17
04	50 K	04
05	40 K	09

Show the memory map of various stages by using MVT scheduling. Assumption total memory is of 400 K and monitor of 100 K and all jobs are arrived at same time.

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

- (a) Explain Resource Allocation graph in detail.
- (b) Explain the term "Overlays" in detail with diagrams.
- (c) List and explain services provided by the operating system.
- (d) Explain contiguous memory allocation method in detail.

(e) The request queue is as follows :

87, 148, 92, 171, 96, 131, 103, 71

Number of tracks = 0 to 199

Starting position or current head position = 125. Find total head movement by applying SSTF (Shortest seek time first)

Disk scheduling algorithm.

Total No. of Questions—5]

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[5363]-304

B.C.A./B.B.A. (CA) (Semester III) EXAMINATION, 2018

304 : BUSINESS MATHEMATICS (Theory)

(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 pocket calculator is allowed.

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

(i) The ratio of prices of two cars was 3 : 4, three years later, when the price of first had risen by 10% and that of the second by ₹ 7,000, the ratio becomes 11 : 15. Find the new prices of the cars.

(ii) Rohit purchased 200 toys at ₹ 20 each. He sold all toys at ₹ 30 each. Find out total profit and percentage of profit earned.

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

(i) Makarand invests some amount and losses 10% in the first year but in the next year, he gains 20% of what he had at the end of first year. If there is an increase of ₹ 1,440 in his capital at the end of two years, find his original capital.

P.T.O.

- (ii) A man purchases eggs at ₹ 65 per dozen and sells them at ₹ 7 per egg. Find his gain or loss percent.
- (iii) Find the rate of simple interest, if the sum of money triple itself in 14 years.

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

- (i) A Refrigerator set was bought for ₹ 14,000 and sold for ₹ 16,400 through a broker who charges commission 4% on purchase and 5% on sales. Find the total gain or the loss in the transaction.
- (ii) Manasi purchased flat for ₹ 5,60,000. For this purpose she has taken loan from Bank for 5 years at 9% p.a. Find out the EMI to be paid by her.

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

- (i) The ratio of salaries of Jagriti and Pravin is 6 : 7 while the ratio of salaries of Pravin and Nilesh 3 : 5. Find the ratio of salaries of A, B and C. If the salary of Nilesh is ₹ 17,500. Find salary of Jagriti.
- (ii) At what price should an article costing ₹ 510 be sold, so that after giving 15% cash discount and a profit of 20% is made ?
- (iii) Find the compound interest on ₹ 6,200 at 4½% p.a. in the third year.

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

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

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

$$x + y + z = 0$$

$$4x - y - 3z = 20.$$

(ii) Obtain the inverse of the following matrix by adjoint method :

$$A = \begin{bmatrix} 3 & 3 & 4 \\ 2 & -3 & 4 \\ 0 & -1 & 1 \end{bmatrix}.$$

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

(i) Compute :

$$\left\{ 4 \begin{bmatrix} 1 & 3 & 0 \\ -1 & 4 & 5 \end{bmatrix} - \begin{bmatrix} -1 & -5 & -2 \\ 3 & 4 & 5 \end{bmatrix} \right\} \begin{bmatrix} 1 \\ 4 \\ 1 \end{bmatrix}.$$

(ii) A and B two type of fertilizers available at ₹ 30 and ₹ 50 per kg respectively. Fertilizer A contains 20 units of potash, 10 units of nitrogen and 40 units of phosphorus. Fertilizer B contains 15 units of potash, 20 units of nitrogen and 10 units of phosphorus. The requirement of potash, nitrogen and phosphorus is at least 1800, 1700, 1600 units. Formulate the problem as L.P.P. in order to minimize the total cost.

(iii) If 75 persons can perform a piece of work in 12 days of 10 hours each. How many persons could perform of piece of work twice as large in half the number of days working 8 hours daily ?

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

(i) Solve the following L.P.P. using graphical method :

Maximize :  $Z = x + 2y$

Subject to the condition :

$$x + y \leq 10$$

$$0 \leq x \leq 75$$

$$0 \leq y \leq 60$$

(ii) Solve the following transportation problem by using Vogel's approximation method in order to minimize total transportation cost :

		Destination					Availabilities
		D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	D <sub>4</sub>	D <sub>5</sub>	
Origin	O <sub>1</sub>	3	5	8	9	11	20
	O <sub>2</sub>	5	4	10	7	10	40
	O <sub>3</sub>	2	5	8	7	5	40
Demand		10	15	25	20	30	

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

(i) Obtain the initial basic feasible solution to the following transportation problem by using least cost method :

		Destination				Total Supply
		D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	D <sub>4</sub>	
Warehouses	W <sub>1</sub>	50	150	70	60	40
	W <sub>2</sub>	80	70	90	10	60
	W <sub>3</sub>	15	90	80	80	50
Total Demand		20	70	50	10	150

(ii) Find the amount of ₹ 6,000 at 12% p.a. in 3 years compounded quarterly.

(iii) When an article is sold at a gain of 10% it fetches ₹ 10 more than if it were sold at a loss of 10%. Find the cost price of the article.

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

(i) What is transportation problem ? Explain the method to solve by North-West corner method.

(ii) Find the difference between compound interest and simple interest on a sum of ₹ 3,000 at 10% p.a. for two years.

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

(i) Explain the following terms :

(1) Compound Interest

(2) Cash Discount

(3) Trade Discount.

(ii) Find the values of  $x$  and  $y$  if :

$$\begin{bmatrix} x & y \\ 1 & 2 \end{bmatrix} \begin{bmatrix} 2 & 3 \\ 5 & 1 \end{bmatrix} = \begin{bmatrix} 3 & 11 \\ 12 & 5 \end{bmatrix}.$$

(iii) What number must be subtracted from each of 9, 11, 15, 19 so that the differences will be proportional ?

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[5363]-305

**B.C.A./B.B.A. (CA) (Semester III) EXAMINATION, 2018**

**305 : 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*) : [8×2=16]

- (a) Define system and its elements.
- (b) Define Economical feasibility.
- (c) Define Software Engineering.
- (d) State advantages of Waterfall Model.
- (e) What is E-R diagrams ? Draw various symbols of E-R diagrams.
- (f) What is module ?
- (g) What is Software testing ?
- (h) What is fact finding technique ?
- (i) State any *two* types of coupling.

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

- (a) Distinguish between TPS and DSS.

P.T.O.

- (b) What is System Analyst ? Discuss the role of System Analyst.
  - (c) Explain different McCall's quality factors.
  - (d) Explain Spiral Model in detail.
  - (e) What is Black Box Testing ? Explain the methods used in BBT.
  - (f) Define Cohesion. Explain the types of Cohesion.
3. (a) Design a Screen Layout for creating user account on Internet (with personal details, user-id and password, save, cancel commands etc). [8]
- (b) A Mapro Foods Pvt. Ltd. Company is offering certain discount on the total amount of purchase. If the purchasing amount is more than 5,000 and the customer is making the payment within 5 days then company 5% discount on invoice. If the purchase amount is between 3,000 to 5,000 and the customer is making the payment within 5 days then company offers 3% discount. If the amount is less than 3,000 and customer is making the payment within 5 days then no discount offered and customer has to pay full amount. If customer is not able to pay within 5 days then no discount is given.
- Draw decision table and decision tree for the above case. [8]

4. Write short notes on any *four* : [4×4=16]

(a) System characteristics

(b) SRS Documentation

(c) Prototype Model

(d) Structured Chart

(e) White Box Testing.

5. Case Study : [16]

Consider a Hospital Management System in which the Hospital has InPatient Department (IPD), OutPatient Department (OPD) the system maintains patient records and bills of patient it also manages, information of various wards in the hospital like ICU, General, Private, Semi-private and Delux.

(a) Identify all entities.

(b) Draw context level diagram.

(c) First level DFD for the system.

Total No. of Questions—5]

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[5363]-401

**B.B.A. (C.A.)/B.C.A. (Semester IV) EXAMINATION, 2018**

**401 : OBJECT ORIENTED PROGRAMMING USING C++**

**(2013 PATTERN)**

**Time : Three Hours**

**Maximum Marks : 80**

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

(ii) Figures to the right indicate full marks.

(iii) *All* questions carry equal marks.

(iv) Neat diagrams must be drawn wherever necessary.

(v) Assume suitable data if necessary.

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

[8×2=16]

(a) What is Reference Variable ?

(b) List any *four* features of OOPs.

(c) What is an Abstract Class ?

(d) What is Inline function ?

(e) What is the difference between cin & getline( ) ?

(f) What is generic pointer ?

(g) What is stream concept in C++ ?

(h) What is Dereferencing operator ?

P.T.O.

- (i) Explain in which circumstances `catch(...)` statement would be used ?
- (j) Write `seekg( )` function to :
  - (i) move get pointer 10 bytes backward from end of file.
  - (ii) move get pointer to start of file.

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

- (a) Explain default argument with the help of suitable example and also write in which situation default arguments are useful.
- (b) What is exception ? Explain, how exception is handled in C++.
- (c) Explain any *four* formatted input/output functions.
- (d) Create a class student having the following members :
  - Rollno
  - Name
  - Percentage

Write necessary member function to accept student details and display details along with class obtained depending on percentage.

- (e) Design C++ class which contains function `display( )`. Write a program to count number of times `display( )` function is called. (Use static data member).

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

- (a) Define polymorphism. Explain its types.
- (b) What is file in C++ ? Explain *two* methods of opening a file with syntax.
- (c) What is need of call by reference ? Explain with example.
- (d) Write a C++ program to calculate square and cube of an integer number by using inline function.
- (e) Write a C++ program to display number of vowels present in a given file.

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

- (a) Write a note on class templates.
- (b) Explain the use of new and delete operator with the help of suitable example.
- (c) Write a program which consist a function to find out the rate of interest with default arguments.
- (d) Create a C++ class maximum to perform the following functions as :
  - (i) `int max(int, int)` ⇒ Returns maximum of two integer numbers
  - (ii) `int max(int[ ], int)` ⇒ Returns largest number from an integer array of size n

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

```
#include<iostream.h>
class space
{
    int x, y, z;
    public :
        void getdata(int a, int b, int c)
        {
            x = a;
            y = b;
            z = c;
        }
        void display( )
        {
            cout<< x <<" ";
            cout<< y <<" ";
            cout<< z <<" ";
        }
        void operator - ( )
        {
            x = -x;
            y = -y;
            z = -z;
        }
};
```

```

int main( )
{
    space S;
    s.getdata(10, -20, 30);
    cout<< "S:";
    s.display( );
    -S;
    cout<< "S:";
    s.display( );
    return 0;
}

```

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

- (a) Explain pointer to object with example.
- (b) Explain pure virtual function with example.
- (c) Define class string using operator overload “==” to compare two strings.
- (d) Create a base class student(rollno, name) which derives two classes test(mark1, mark2), sport(score).  
Class result(total\_marks, grade) inherits both test and sport classes. Write C++ program to calculate total\_marks, percentage and to display marksheet.
- (e) Trace output of the following program. Assume there is no error :

```

#include<iostream.h>
using namespace std;
class P
{
    public :
        void print( )
        {
            cout<<"Inside P";
        }
};

```

```
class Q : public P
{
    public :
        void print( )
        {
            count<<"Inside Q";
        }
};
class R : public Q
{
};
int main(void)
{
    R r;
    r.print( )
    return 0;
}
```

Total No. of Questions—5]

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[5363]-402

**B.B.A./B.C.A. (CA) (Semester-IV) EXAMINATION, 2018**

**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 illustration wherever necessary.

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

(a) Property to set items alphabetically in the list.

(b) Property to hide image at run time.

(c) Property used to display all \*.doc extension file in filelist box.

(d) Property used to resize picture to fit in the image control.

(e) Property used to display a read only combo box.

(f) Property used to display the form as full screen at run time.

(g) Property used to display text in a textbox at center.

(h) Property display colour on the command button.

(i) Property used to set shape as circle.

(j) Property set used to remove item in combobox.

P.T.O.

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

- (a) Explain if-then-else statement with syntax and example.
- (b) Explain any four Numeric functions with example.
- (c) What do you mean by variable ? Explain the scope of variables.
- (d) What is meant by ActiveX controls ?
- (e) Compare ComboBox and ListBox.

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

- (a) Write a VB program to calculate GCD of two numbers.
- (b) Write a VB program to display transpose matrix of a given  $m \times n$  matrix.
- (c) Write a VB program to find factorial of a given number.
- (d) Write a VB program to calculate sum of first and last digit of a given number.
- (e) Write a VB program to check whether the given number is palindrome or not.

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

- (a) Write a VB program to accept the details of books for a Library Management system from the users and store the details in the database (Don't use standard control). Book having fields (B-id-B-title, Author, publication year, price).

(b) Describe the following VB controls with their properties and methods :

(i) Text Box

(ii) ComboBox

(iii) Command Button

(iv) Check Box.

(c) What is Menu Editor ? Explain the steps to create Popup menu using menu editor with suitable example.

5. Write short notes on [any *four*] : [4×4=16]

(a) Toolbar Control

(b) With Statement

(c) Option Button

(d) Data and

(e) Event Driven Programming.

Total No. of Questions—5]

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[5363]-403

**B.C.A./B.B.A. (CA) (Semester-IV) EXAMINATION, 2018**

**COMPUTER NETWORKING**

**(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 *three* of the following : [3×5=15]

- (a) Define network topology. List different types of topologies. Explain any one in detail.
- (b) Explain functions of each layer of ISO-OSI reference model.
- (c) Explain wireless transmission and explain any one media in detail.
- (d) Define the bridge. Explain the types of bridges.

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

- (a) Explain different types of web documents.
- (b) Describe the frame format and physical layer of Ethernet.
- (c) Explain different types of addresses.
- (d) What is switch ? How does it differ from HUB ?

P.T.O.

3. Attempt any *three* of the following : [3×5=15]
- (a) Explain ISO-OSI reference model in detail.
  - (b) What are different modes of communication ? Explain any one in detail.
  - (c) Explain active and passive HUB.
  - (d) Explain propagation method.
4. Attempt any *three* of the following : [3×5=15]
- (a) Explain Synchronous communication.
  - (b) Explain WWW architecture.
  - (c) Write a note on protocols and standards.
  - (d) Explain bluetooth in detail.
5. Write notes on (any *four*) : [4×5=20]
- (a) Repeaters
  - (b) Unguided Media
  - (c) SAP
  - (d) Search Engine
  - (e) MAC sublayer with its frame format.

Total No. of Questions—5]

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[5363]-404

**B.B.A./B.C.A. (C.A.) (Semester IV) EXAMINATION, 2018**  
**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) List the types of Business Models.
- (b) What is Data Warehouse ?
- (c) Define SAP.
- (d) Define BPR.
- (e) Define Electronic Data Interchange.
- (f) What is Business Modeling ?
- (g) What is an Enterprise ?
- (h) Define CRM.

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

- (a) Explain the role of E-Commerce in ERP.
- (b) Explain any *two* SAP tools in detail.
- (c) Discuss evolution of EDI.
- (d) Explain the role of Consultants for ERP.
- (e) Explain any *four* Technologies used in Data Mining.

P.T.O.

- 3.** Answer the following (any *four*) : [4×4=16]
- (a) Explain the process of establishing Vendor Enterprise Link.
  - (b) Explain benefits of ERP in detail.
  - (c) Explain Data Warehouse and uses of Data Warehouse.
  - (d) Explain Internet Integration Technology in ERP system.
  - (e) Explain any *four* limitations of ERP.
- 4.** Answer the following (any *four*) : [4×4=16]
- (a) Explain different phases in ERP life cycle.
  - (b) Explain the characteristics of Client/Server Architecture.
  - (c) Define BPR. Explain the role of BPR in ERP.
  - (d) Define Customer Relationship Management and explain uses of CRM.
  - (e) Explain evolution of packaged software solutions.
- 5.** Write notes on (any *four*) : [4×4=16]
- (a) EIA Products
  - (b) EDI Components
  - (c) OLAP
  - (d) Scope of Enterprise System
  - (e) Growth of ERP — Reasons.

Total No. of Questions—6]

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[5363]-405

**B.C.A./B.B.A. (C.A.) (IV Semester)**  
**EXAMINATION, 2018**  
**HUMAN RESOURCE MANAGEMENT**  
**(2013 PATTERN)**

**Time : Three Hours**

**Maximum Marks : 80**

- N.B. :—** (i) Question No. 6 is compulsory.  
(ii) Attempt any *four* questions from the remaining.  
(iii) Figures to the right indicate full marks.  
(iv) Draw figures/charts wherever necessary.

1. Define the concepts HRM and PM. Explain the challenges before HRM and HRP. [15]
2. Define the term 'Training'. Explain the importance and methods of Training. [15]
3. Explain the concept Employee Remuneration. State the factors determining the level of remuneration. [15]
4. What is 'Grievance' ? Explain in detail the Grievance Procedure and Grievance Machinery. [15]

P.T.O.

5. What is 'Performance Appraisal' ? Explain the uses and limitations of Performance Appraisal. [15]
6. Write short notes on (any *four*) : [20]
- (a) Concept of Recruitment
  - (b) Fringe Benefit
  - (c) Principles of Discipline
  - (d) Nature of E-HRM
  - (e) E-Compensation
  - (f) Promotion and demotion policy.

Total No. of Questions—5]

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[5363]-501

**B.C.A./B.B.A (CA) (Semester-V) EXAMINATION, 2018**

**501 : JAVA PROGRAMMING**

**(2013 PATTERN)**

**Time : Three Hours**

**Maximum Marks : 80**

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

(ii) Assume suitable data, if necessary.

(iii) All questions carry equal marks.

1. Attempt any *eight* : [2×8=16]

(a) List the types of Applet.

(b) What is exception ?

(c) What is collection framework ?

(d) List any *two* differences between HashMap and HashTable.

(e) What are the different ways to create an object in Java ?

(f) State the purpose of wrapper class.

(g) Can you save a Java source file by name than class name ?

(h) What is JVM ?

(i) What is instance variable ?

(j) List Java non-access modifiers.

P.T.O.

2. Attempt any *four* : [4×4=16]

- (a) Write a Java program to display “Welcome to Applet” with settings Font-Verdana, Foreground Color-Red, Background Color-Yellow on the frame.
- (b) How to create user defined package ? How to access it ? Explain with example.
- (c) Explain the use of super keywords with reference to inheritance.
- (d) Explain exception handling with example.
- (e) Write a Java program to copy the contents of one file into the another file, while copying change the case of alphabets and replace all the digits by ‘\$’ in target file [Use command line argument].

3. Attmpt any *four* : [4×4=16]

- (a) Define an abstract class shape with abstract method area() and valume(). Write a Java program to calculate area and valume of cone and cylinder.
- (b) What is adapter class ? Explain its purpose.
- (c) Explain the need of Garbage collection in Java.
- (d) Write a Java program to accept an age from the user, if age is less than 18 then throw “Invalid age” user defined exception.
- (e) Explain data types in Java.

4. Attempt any *four* : [4×4=16]

- (a) Write a Java program to accept the details of '*n*' students (Sname, Sper) from the user, store them into the hashtable and displays the student names having maximum Sper.
- (b) Explain inner class in Java with example.
- (c) Explain arrays in Java. How does it differ from C++ ?
- (d) Differentiate StringBuffer and StringBuilder class.
- (e) Write a Java program to accept '*n*' nos through the command line and store all even nos and all odd nos in to the different arrays and display both arrays.

5. Attempt any *four* : [4×4=16]

- (a) Write a Java program to design a screen using awt that will take a username and password. If the user name and password are not same, raise an exception with appropriate message. User can use clear button to clear the Textfields.
- (b) What is event handling ? Explain with example.
- (c) Write a Java program to display the alternate characters of a file.
- (d) What is applet ? Explain life cycle of applet.
- (e) Write a short note on Abstract class.

Total No. of Questions—5]

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[5363]-502

**B.C.A./B.B.A. (CA) (Semester-V) EXAMINATION, 2018**

**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) List any *four* benefits of CSS.
- (b) Define the term internet protocol.
- (c) Define Ksort () method with an syntax.
- (d) Explain javascript array methods.
- (e) Give any *two* image mapping tags with example.
- (f) Explain Indexed array with example.
- (g) Define variable function in PHP.
- (h) Define type casting.
- (i) List any *four* tags used in HTML.
- (j) Name of any *two* events associated with mouse.

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

- (a) Explain in detail the lexical structure of the PHP.

P.T.O.

- (b) Explain in detail the various HTML frame tags.
- (c) Explain event handling in Javascript.
- (d) Explain slicing an array in PHP with example.
- (e) Write HTML code to design the following output for table :

<b>Train Time-Table</b>			
<b>T.No.</b>	<b>TNAME</b>	<b>Arrival Time</b>	<b>Departure time</b>
T01	Rajdhani	04:00 PM	04:30 PM
T07	Indrayani	05:15 PM	05:45 PM

3. Solve any *four* of the following : [4×4=16]
- (a) Explain DOM in Javascript.
  - (b) Explain CSS with example.
  - (c) Explain in detail the methods used for string comparisons in PHP.
  - (d) Write a PHP script to display a multiplication table in tabular format.
  - (e) Write a Javascript to create an image slider (use array to store images).
4. Solve any *four* of the following : [4×4=16]
- (a) Explain HTML form elements with example.
  - (b) Explain encoding and escaping in PHP.

- (c) Write a Javascript program to read a number from user, store its factors into the array and display that array.
- (d) Write a PHP script to check whether a given number is Armstrong number or not.
- (e) Write HTML and CSS code to design a web page. Divide the browser screen into two frames. The first frame will display the headings. Divide the second frame into two columns. Rightside frame containing “Home and kitchen appliances”. Leftside frame contains details of appliances.

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

- (a) Write short note on FTP.
- (b) Write short note on traversing array in PHP.
- (c) Write short note on <div> and <span> tag.
- (d) Date objects in Javascript.
- (e) Write short note on Data types in PHP.

Total No. of Questions—5]

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[5363]-503

**B.B.A.(C.A.)/B.C.A. (Semester-V) EXAMINATION, 2018**

**VB.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 diagrams wherever necessary.

(iv) Design proper GUI.

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

(a) Explain difference between ListBox and ComboBox.

(b) What is MSIL ?

(c) Explain any *two* Built-in Date function.

(d) What do you mean by MyBase class.

(e) What do you mean by MDI in VB.net ?

(f) What is data validation in VB.net.

(g) Explain print preview dialog control in dialog box function.

(h) Enlist various keyboard events in VB.net.

(i) Explain any **4** properties of form.

(j) Define delegates in VB.net.

P.T.O.

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

- (a) What is .Net framework ? Explain its Architecture ?
- (b) Design GUI and write code for following in VB.net (ADO.Net) with wizard.
  - Accept employee details like Emp-No, Emp-Name, Emp-Address, Emp-date-of-joining, Save this details in Employee table.
- (c) Explain overloading and overriding in VB.net.
- (d) Write a program which uses a function to check whether a given number is perfect or Not, using console application.
- (e) Explain any *four* advantages of VB.net framework.

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

- (a) Design GUI and write code for the following in VB.net.
  - Accept a number in textbox.
  - Convert the number into binary and show result in second textbox.
- (b) Explain Message Box control with its various parameters.
- (c) Explain try, catch and finally block with example.
- (d) Design GUI and write code for the following in VB.net :
  - Accept five names in ListBox.
  - Sort the items in the ListBox Alphabetically.
- (e) Explain any *two* control structures with example.

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

- (a) Explain inheritance and types of inheritance in VB.Net.
- (b) Explain constructor with example in VB.Net.
- (c) Explain an Interface in VB.Net with example.
- (d) Design GUI and write code for the following in VB.Net (ADO.Net) without wizard.
  - Accept teacher's details like Teacher\_No., Teacher-Name, Teacher\_Qualification and save these details in teachers table.
- (e) Explain the following controls :
  - (1) Tree view
  - (2) Progress Bar
  - (3) ToolTip
  - (4) LinkLabel

5. Write short notes on (any *four*) : [4×4=16]

- (a) Menus in VB.Net.
- (b) Data Adapter
- (c) Progress bar
- (d) CLR features
- (e) Myclass.

Total No. of Questions—5]

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[5363]-504

**B.C.A./B.B.A. (CA) (Semester-V) EXAMINATION, 2018**  
**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) What is multiple inheritance ?

(b) Define Generalization.

(c) What is system boundary ?

(d) Consider a single object “customer” and draw object diagram with possible attributes.

(e) What is joining ?

(f) Define Inception.

(g) Define task management component.

(h) What is lifeline ?

(i) What is dependency ?

P.T.O.

2. Attempt any *four* of the following : [4×4=16]
- (a) Define UML. What are the goals of UML ?
  - (b) What is Association ? Explain important terms in Association.
  - (c) Draw class diagram for library management system.
  - (d) Describe the Jacobson method in details.
  - (e) What is UP. Explain any *two* phases in details.
3. Attempt any *four* of the following : [4×4=16]
- (a) What is package ? Explain different kind of packages.
  - (b) Define things. Explain Behavioral things in details.
  - (c) What is use cases ? State include and extend relationship among use cases with example.
  - (d) What is iterative development ? Explain the phases of iterative development.
  - (e) Explain different elements of object model
4. Attempt any *four* of the following : [4×4=16]
- (a) What is object orientation ? State various reasons for why object orientation.
  - (b) Explain dependancy relationship along with different stereotypes.
  - (c) Define sequence diagram. Explain different kinds of its notations.
  - (d) Explain the data management component.

(e) Define the following terms :

- (i) Elaboration
- (ii) Note
- (iii) Forking
- (iv) Polymorphism

5. Attempt the following :

Railway reservation system is a system used for booking tickets over internet-Any customer can book tickets for different trains. Customer can book a ticket only if the tickets are available. Customer searches for the availability of ticket then if the ticket are available he books the ticket by initially filling details in a form. Tickets can be booked in two ways by i-ticket or by e-ticket booking.

In case of i-ticket booking customer can book the ticket online and the tickets are couriered to particular customer at their address, but in case of e-ticket booking and cancelling ticket are booked and cancelled online sitting at the home and customer himself has to take print of the ticket but in both the cases amount for tickets are deducted from customer's amount.

For cancellation of ticket the customer's has to go at reservation office then fill cancellation form and ask the clerk to cancel the ticket then the refund is transferred to customer's account. After booking ticket the customer has to check out by paying fare amount to clerk.

Consider above situation. Draw the following UML diagrams :

- (a) Use case diagrams [4]
- (b) Class diagrams [4]
- (c) Actiuity diagrams. [4]
- (d) Sequence diagrams. [4]

Total No. of Questions—5]

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[5363]-601

**B.B.A./B.C.A. (CA) (Semester-VI) EXAMINATION, 2018**

**601 : ADVANCED WEB TECHNOLOGIES**

**(2013 PATTERN)**

**Time : Three Hours**

**Maximum Marks : 80**

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

(ii) Figures are required whenever necessary.

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

- (a) Give any *two* applications of AJAX ?
- (b) What is serialization ?
- (c) What is XML ?
- (d) Enlist the HTTP Request methods.
- (e) What is SOAP ?
- (f) Which are the databases supported by PHP ?
- (g) Enlist the method of DOM parser.
- (h) What is web services ?
- (i) What is setcookie () function ?
- (j) Enlist different attributes for ready state.

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

- (a) Define constructor. Explain it with the help of program.

P.T.O.

- (b) What is self-processing form ? Explain with the help of program.
- (c) Explain AJAX web application model.
- (d) Write a PHP program to accept two strings from user and check whether entered strings are matching or not ?  
(Use sticky form concept).
- (e) Write a PHP script to demonstrate the concept of introspection for examining object.

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

- (a) Explain simplexml extension with the help of example.
- (b) Explain how Ajax works ?
- (c) What is DOM ? Explain it with the help of program.
- (d) Write a simple PHP program which implements Ajax for addition of two numbers.
- (e) Create a XML file which gives details of books available in “ABC Bookstore” from the following categories :
  - (i) Technical
  - (ii) Cooking
  - (iii) Yoga.

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

- (a) Give an example of PHP and Ajax application for searching.
- (b) What is XML-RPC ?

(c) Explain how to link CSS to XML.

(d) Create Student table as follows :

Student (Sno, Sname, per)

Write Ajax program to select the student name and print the selected student's details.

(e) Consider the following relational database :

Project (P-Group-No, Project-Title)

Student (Seat No, Name, Class, P-Group-No).

Write a PHP script to accept project title and display list of students those who are working in a particular project.

5. Write short notes on (any *four*) : [4×4=16]

(a) Introspection

(b) XML document structure

(c) Redirection

(d) WSDL

(e) Multivalued parameter.

Total No. of Questions—5]

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[5363]-602

**B.C.A./B.B.A (CA) (Semester-VI) EXAMINATION, 2018**

**602-ADVANCED JAVA**

**(2013 PATTERN)**

**Time : Three Hours**

**Maximum Marks : 80**

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

(ii) Figures to the right indicate full marks for the questions.

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

- (a) What is Thread ? How to set the priority of Thread.
- (b) What is RMI Registry.
- (c) What is the role of Prepared Statement ?
- (d) Explain the types of Servlet.
- (e) What is the use of for Name() method ?
- (f) Write names of JSP Directives.
- (g) What is Cookie ?
- (h) What is the use of manifest.txt file ?
- (i) What is the use of setMaxInactiveInterval () method.
- (j) What is the use of getLocalHost () method ?

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

- (a) Explain JDBC Drivers.

P.T.O.

- (b) Explain RMI Architecture with suitable diagram.
  - (c) Explain the difference between TCP/IP and UDP.
  - (d) Write a JDBC program to accept the details of customer (CID, CName, Address, Ph\_No.) and store it into the database (Use Prepared Statement interface).
  - (e) Write a Multithreading program in Java to display the numbers between 1 to 100 continuously in a TextField by clicking on button. (use Runnable Interface).
- 3.** Answer the following (any *four*) : [4×4=16]
- (a) What is Thread ? Explain thread life cycle with diagram.
  - (b) Explain JSP tags with example.
  - (c) Explain servlet life cycle with suitable diagram.
  - (d) Write a Java program using multithreading to execute the threads sequentially (Use Synchronized Method)
  - (e) Write a JDBC program in Java to update an address of given customer (cid, cname, address) and display updated details.
- 4.** Attempt any *four* : [4×4=16]
- (a) State purpose of :
    - (i) Statement
    - (ii) Connection
    - (iii) Result set
    - (iv) Driver Manager.
  - (b) What is Java Beans ? Explain the advantages of Java Beans.
  - (c) Explain thread Synchronization in detail.

- (d) Write a JSP program to calculate sum of first and last digit of a given number. Display sum in Red Color with font size 18.
- (e) Write a JDBC program to delete the records of employees whose names are starting with 'A' character.

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

- (a) Write a SERVLET application to accept username and password, and search them into database, if found then display appropriate message on the browser otherwise display error message.

*Or*

Write a JSP program to accept the details of Account (ANo, Type, Bal) and store it into database and display it in tabular form (Use Prepared Statement interface).

- (b) Write a Socket program in Java for simple standalone chatting application.

*Or*

Write a SOCKET program in Java to check whether given file is present on server or not, if it is present then display its content on the server's machine otherwise display error message.

Total No. of Questions—5]

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[5363]-603

**B.C.A./B.B.A. (CA) (Semester-VI) EXAMINATION, 2018**

**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.

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

- (a) What is Homogeneous distributed database ?
- (b) What is Software quality assurance (SQA) ?
- (c) List the features of data warehouse.
- (d) Define the term Secret key.
- (e) List the cloud services model.
- (f) Which are the types of database fragmentation ?
- (g) List out the software quality factors.
- (h) Explain the term Data cleaning.
- (i) Define the following terms :
  - (i) Encryption
  - (ii) Decryption.
- (j) Explain the term 'GPS'.

P.T.O.

2. Attempt any *four* of the following : [4×4=16]
- (a) Explain communication techniques used in software development process.
  - (b) Explain large object data types in detail.
  - (c) Define data mining. Give advantages and disadvantages of data mining.
  - (d) Explain symmetric key algorithm in cryptography.
  - (e) What is cloud computing ? Explain advantages and disadvantages in detail.
3. Attempt any *four* of the following : [4×4=16]
- (a) What is Green computing ? Explain features of green computing.
  - (b) Explain the following terms :
    - (i) DES–Data Encryption Standard
    - (ii) AES–Advanced Encryption Standard.
  - (c) Explain OLAP architecture. What are the OLAP operations ?
  - (d) Write a short note on analysis principles in software process.
  - (e) Write down the pros and cons in software prototyping.
4. Attempt any *four* of the following : [4×4=16]
- (a) Explain Data Reduction. What are the strategies of data reduction ?
  - (b) Write a short note on RSA.

- (c) What is soft computing ? Describe techniques of soft computing in detail.
- (d) Explain Abstract data types.
- (e) What are the current and future trends in mobile computing ?

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

- (a) Explain architecture of Data Mining.
- (b) Define :
  - (i) Active Attack
  - (ii) Passive Attack.
- (c) What is cryptography ? Explain types of cryptography.
- (d) Write a short note on One time pad.
- (e) Explain applications of data warehouse.

Total No. of Questions—5]

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[5363]-604

B.C.A./B.B.A. (C.A.) (Semester VI) EXAMINATION, 2018

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*) : [8×2=16]

- (1) Define Metric in terms of Software metric.
- (2) State the objectives of Smoke testing.
- (3) What is the objective of Testing ?
- (4) State and explain nature of errors.
- (5) Explain TSL.
- (6) State and explain the drawbacks of Big-Bang approach of Testing.
- (7) What is meant by a Driver ?
- (8) Define Regression Testing.
- (9) Define ( $\alpha$ ) (Alpha) Testing.
- (10) Draw diagram of the Testing Process.

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

- (1) Explain Recovery testing and Security testing.
- (2) Explain all the testing principles in detail.

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- (3) Explain Equivalence Class Partitioning (ECP).
  - (4) Explain how the testing is done for Documentation and Help facilities ?
  - (5) Explain Test Automation in detail.
3. Attempt any *four* of the following : [4×4=16]
- (1) Explain all the factors of Testability.
  - (2) Explain the Top-down approach of Integration testing.
  - (3) Explain size-oriented metrics with an example.
  - (4) Explain testing for Real-time systems.
  - (5) Explain Rational Robot as an automation tool.
4. Attempt any *four* of the following : [4×4=16]
- (1) Explain the Sandwich approach of Integration.
  - (2) Explain Performance Testing.
  - (3) Explain testing of client-server architecture.
  - (4) Give difference between verification and validation.
  - (5) Explain Tunit as a testing tool.
5. Write short notes on (any *four*) : [4×4=16]
- (1) Load testing
  - (2) Complexity metrics with example
  - (3) Unit Testing
  - (4) White-Box testing
  - (5) WinRunner.