(20518) Roll No. .....

BCA-II Sem.

18006

B. C. A. Examination, May 2018

C Programming

(BCA-202)

(New)

Time : Three Hours] *[Maximum Marks : 75*

Note : Attempt questions from all Sections as per instructions.

Section-A

(Very Short Answer Questions)

Attempt all the *five* questions. Each question carries 3 marks. Very short answer is required not exceeding 75 words. 3×5=15

1. Differentiate between string and character array. 3

2. What is generic pointer ? How can it be converted to a specific type of pointer ? 3

3. What is the output ? 3

```
#include < stdio.h>
  int func (int);
  main( )
{
  int a = 2;
  printf ("%", func(a));
  return 0;
}
int func(int a)
{
  if (a > 1)
  return func (- - a) + 10;
  else
  return 0;
}
```

4. Explain the difference between malloc ( ) and calloc( ) function. 3

5. Explain the importance of the # define preprocessor directive. 3

Section-B

(Short Answer Questions)

Attempt any *two* questions out of the following three questions. Each question carries 7½ marks. Short answer is required not exceeding 200 words.

7½×2=15

6. Write a program to sort an array. 7½

7. Write a C program to find the reverse of each word of a string (how are you : output : woh era uoy). 7½

8. Differentiate between rewind( ) and fseek( ). Can fseek( ) work as an alternative to rewind( ). If yes, why ? 7½

Section-C

(Detailed Answer Questions)

Attempt any *three* questions out of the following five questions. Each question carries 15 marks. Answer is required in detail. 15×3=45

9. (a) Why are arrays needed ? Write a program to calculate the number of duplicate entries in an array. 7½

   (b) With the help of an example, explain how pointers can be used to dynamically allocate space for two-dimensional array. 7½

10. (a) What do you understand by EOF ? Write a program to read a text file, convert all the lower case characters into upper case. 7½

    (b) What is string ? Explain any five library functions of string. 7½

11. (a) Create a Structure BANK to maintain the records of a bank customers. It has the following fields CUST-ID, NAME, ACC-TYPE, BALANCE.

    (i) A new record is added when a customer open an account

    (ii) A existing record is updated when user deposits or withdraw an amount.

    Create Menu-Driven Program. 7½

    (b) What do you understand by pointers ? Write a program to count the number of characters, words and lines in the text using pointer. 7½

12. (a) What is macro ? Explain the difference between object macro and function macro with example. 5

    (b) Write a program to swap two numbers using pointer with structure. 10

13. (a) Explain the use of bitwise operators in programming with suitable example. 7½

    (b) Write a program that reads a binary file that stores employees records and prints on the screen the number of records that are stored in the file. 7½

(20518) Roll No. .....

BCA-II Sem.

18006

B. C. A. Examination, May 2018

C Programming

(BCA-202)

(New)

Time : Three Hours] *[Maximum Marks : 75*

Note : Attempt questions from all Sections as per instructions.

Section-A

(Very Short Answer Questions)

Attempt all the *five* questions. Each question carries 3 marks. Very short answer is required not exceeding 75 words. 3×5=15

1. Differentiate between string and character array. 3

2. What is generic pointer ? How can it be converted to a specific type of pointer ? 3

3. What is the output ? 3

```
#include < stdio.h>
  int func (int);
  main( )
{
  int a = 2;
  printf ("%", func(a));
  return 0;
}
int func(int a)
{
  if (a > 1)
  return func (- - a) + 10;
  else
  return 0;
}
```

4. Explain the difference between malloc ( ) and calloc( ) function. 3

5. Explain the importance of the # define preprocessor directive. 3

Section-B

(Short Answer Questions)

Attempt any *two* questions out of the following three questions. Each question carries 7½ marks. Short answer is required not exceeding 200 words.

7½×2=15

6. Write a program to sort an array. 7½

7. Write a C program to find the reverse of each word of a string (how are you : output : woh era uoy). 7½

8. Differentiate between rewind( ) and fseek( ). Can fseek( ) work as an alternative to rewind( ). If yes, why ? 7½

Section-C

(Detailed Answer Questions)

Attempt any *three* questions out of the following five questions. Each question carries 15 marks. Answer is required in detail. 15×3=45

9. (a) Why are arrays needed ? Write a program to calculate the number of duplicate entries in an array. 7½

   (b) With the help of an example, explain how pointers can be used to dynamically allocate space for two-dimensional array. 7½

10. (a) What do you understand by EOF ? Write a program to read a text file, convert all the lower case characters into upper case. 7½

    (b) What is string ? Explain any five library functions of string. 7½

11. (a) Create a Structure BANK to maintain the records of a bank customers. It has the following fields CUST-ID, NAME, ACC-TYPE, BALANCE.

    (i) A new record is added when a customer open an account

    (ii) A existing record is updated when user deposits or withdraw an amount.

    Create Menu-Driven Program. 7½

    (b) What do you understand by pointers ? Write a program to count the number of characters, words and lines in the text using pointer. 7½

12. (a) What is macro ? Explain the difference between object macro and function macro with example. 5

    (b) Write a program to swap two numbers using pointer with structure. 10

13. (a) Explain the use of bitwise operators in programming with suitable example. 7½

    (b) Write a program that reads a binary file that stores employees records and prints on the screen the number of records that are stored in the file. 7½

(20518) Roll No. .....

BCA-II Sem.

18007

B. C. A. Examination, May 2018

DIGITAL ELECTRONICS AND COMPUTER ORGANIZATION

(BCA-204)

(New)

Time : Three Hours] *[Maximum Marks : 75*

Note : Attempt questions from all Sections as per instructions.

Section-A

(Very Short Answer Questions)

Attempt all the *five* questions. Each question carries 3 marks. Very Short answer is required not exceeding 75 words. 3×5=15

1. What are universal gates ? Explain how basic gates can be realize using NAND and NOR gate.

2. Design and draw the logic diagram of full adder.

3. What is Read Only Memory ? How PROM, EPROM, EEPROM differ from each other ?

4. What is flip-flop ? Explain T flip-flop.

5. Using K-map method simplify the following Boolean function :

$$F(ABCD) = \Sigma m(0, 2, 3, 6, 7) + \Sigma d(8, 10, 11, 15)$$

Section-B

(Short Answer Questions)

Attempt any *two* questions out of the following three questions. Each question carries 7½ marks. Short answer is required not exceeding 200 words. 7½×2=15

6. What is race around condition ? Construct master slave flip-flop using SR flip-flop.

7. What is track and sector ? How data are stored in hard disc, floppy disc and CD ROM ? Explain.

8. Using eight 64×8 ROM chips with an enable input and decoder, construct a 512×8 ROM.

Section-C

(Detailed Answer Questions)

Attempt any *three* questions out of the following five questions. Each question carries 15 marks. Answer is required in detail. 15×3=45

9. Design a synchronous sequential circuit with input A and B and output Y. Initially and at any time if both the inputs are 0, then the output Y is equal to 0. When A or B become 1, Y becomes 1 when other input also become 1, Y become 0. The output stay at 0 unit circuit goes back to initial state.

10. Discuss various semiconductor cells. Also discuss a RAM organization. If 16K×8 memory chips are used to construct 64K×16 memory :
    (a) Find how many chips will be needed
    (b) Draw block diagram showing connections of chips to address lines.

11. Explain and compare sequential and combinational circuit. Using full adder, design a four bit adder and subtractor circuit.

12. Explain how 3 to 8 decoder function can be obtained from a demultiplexer.

13. Simplify the following Boolean function : 3×5
    (a) W'X(Z'+YZ) + X(W + Y'Z)
    (b) X'Y + XY + XY'
    (c) XY'Z + X'Y'Z + XYZ
    (d) (X+Z') (Y + Z')
    (e) (A+D)(C'+D)(A+B'+C).

(20518) Roll No. .....

BCA-II Sem.

18009

B. C. A Examination, May 2018

Financial Accounting & Management

(BCA-205)

(New)

Time : Three Hours] *[Maximum Marks : 75*

Note : Attempt questions from all Sections as per instructions.

Section-A

(Very Short Answer Questions)

Attempt all the *five* questions. Each question carries 3 marks. Very short answer is required not exceeding 75 words. 3×5=15

1. What is 'going concern concept' of Accounting ?

2. Draw a 'balance sheet' with imaginary figures.

3. What do you mean by 'break-even point' ?

4. How the working capital is calculated ?

5. Explain the term 'point of indifference'.

Section-B

(Short Answer Questions)

Attempt any *two* questions out of the following three questions. Each question carries 7½ marks. Short answer is required not exceeding 200 words. 7½×2=15

6. What is 'double entry system' of Accounting ? Give the rules of debit and credit.

7. What is 'receivables management' ? What are its objectives ?

8. A company has issued 1,000 equity shares of ₹ 100 each, as fully paid-up. It has earned a profit of ₹ 10,000 after tax. The market price of these shares is ₹ 160 per share. Find out the cost of equity capital before and after tax, assuming a tax rate of 50%.

Section-C

(Detailed Answer Questions)

Attempt any *three* questions out of the following five questions. Each question carries 15 marks. Answer is required in detail. 15×3=45

9. What is capitalization ? Is it different from capital structure ?

10. Write a detailed note on 'Application of Computer in Accounting'.

11. "Finance is the life of industry." Elucidate this statement with suitable examples.

12. Calculate the economic order quantity from the following information and also state the number of orders to be placed in a year :

Consumption of materials per annum = 10,000kgs.
Cost of placing per order = ₹ 25
Cost of material per kg. = ₹ 2
Storage cost (on average inventory) = 4%

13. Balance Sheets of M/s A & B as on 1st Jan., 2016 and 31st Dec. 2016 were as follows :

Balance Sheet

Liabilities	1.1.16 ₹	31.12.16 ₹	Assets	1.1.16 ₹	31.12.16 ₹
Creditors	40,000	44,000	Cash	10,000	7,000
Mrs. A's Loan	25,000	--	Debtors	30,000	50,000
Loan from			Stock	35,000	25,000
Bank	40,000	50,000	Machines	80,000	55,000
Capital	1,25,000	1,53,000	Land	40,000	50,000
			Buildings	35,000	60,000
	2,30,000	2,47,000		2,30,000	2,47,000

During the year, machines costing ₹ 10,000 (accumulated depreciation ₹ 3,000) was sold for ₹ 5,000. The provision for depreciation against machinery as on 1.1.16 was ₹ 25,000 and on 31.12.16 ₹ 40,000. Net profit for the year 2016 amounted to ₹ 45,000.

You are required to prepare :

(a) A statement of change in working capital

(b) A funds flow statement.

(20518) Roll No. .....

BCA- II Sem.

18010

B. C. A. Examination, May 2018

MATHEMATICS-II

(BCA-201)

(New)

Time : Three Hours] *[Maximum Marks : 75*

Note : Attempt questions from all Sections as per instructions.

Section-A

(Very Short Answer Questions)

Attempt all the *five* questions. Each question carries 3 marks. Very short answer is required. 3×5=15

1. Define the following with examples : 3

   (i) Proper subset

   (ii) Complement of a set

   (iii) What is the set $\{x : x \in R,\ x^2 = 9,\ 2x = 4\}$?

2. Let $f : A \to B$ such that $f(x) = x - 1$ and $g : B \to C$ such that $g(y) = y^2$. Find $fog(y)$. 3

3. Show that a linearly ordered poset is a distributive lattice. 3

4. If $u = \tan^{-1}\left(\frac{y}{x}\right)$, show that $x\frac{\partial u}{\partial x} + y\frac{\partial u}{\partial y} = 0$. 3

5. Evaluate $\int_0^{\pi/2}\int_0^{\sin\theta} r d\theta dr$. 3

Section-B

(Short Answer Questions)

Attempt any *two* questions out of the following three questions. Each question carries 7½ marks. Short answer is required. 7½×2=15

6. Show that the direction cosines of a line whose direction ratios are a, b, c are : 7½

$$\frac{a}{\sqrt{a^2+b^2+c^2}}, \frac{b}{\sqrt{a^2+b^2+c^2}}, \frac{c}{\sqrt{a^2+b^2+c^2}}.$$

7. In a group of 50 people, 35 speak Hindi, 25 speak both English and Hindi and all people speak at least one of the two languages. How many people speak only English and not Hindi? How many speak English ? 7½

8. Show that $\sin x(1+\cos x)$ is a maximum at $x=\frac{\pi}{3}$. 7½

Section-C

(Detailed Answer Questions)

Attempt any *three* questions out of the following five questions. Each question carries 15 marks. Answer is required in detail. 15×3=45

9. Find the acute angle between two lines whose direction cosines are given by the relation $l+m+n=0$ and $l^2+m^2-n^2=0$. 15

10. Change the order of integration : 15

$$\int_0^a \int_x^{a^2/x} \phi(x, y)dxdy.$$

11. (a) Evaluate $\int_0^a \int_0^{a-x} \int_0^{a-x-y} x^2 dxdydz$. 7½

(b) Evaluate $\int_0^1 \int_0^{x^2} e^{y/x} dxdy$. 7½

12. (a) Find the shortest distance between the lines: 7½

$$\frac{x-1}{2}=\frac{y-2}{3}=\frac{z-3}{4} \text{ and } \frac{x-2}{3}=\frac{y-4}{4}=\frac{z-5}{5}.$$

(b) Show that the plane $2x-2y+z+12=0$ touches the sphere $x^2+y^2+z^2-2x-4y+2z-3=0$. 7½

13. (a) Transform the equation $x^4\left(\frac{d^2y}{dx^2}\right)+a^2y=0$ by the substitution $x=\frac{1}{z}$. 7½

(b) If $f(x)=\log\left(\frac{1+x}{1-x}\right)$, show that : 7½

$$f(x)+f(y)=f\left(\frac{x+y}{1+xy}\right).$$

(20518) Roll No. .....

BCA- II Sem.

18010

B. C. A. Examination, May 2018

MATHEMATICS-II

(BCA-201)

(New)

Time : Three Hours] *[Maximum Marks : 75*

Note : Attempt questions from all Sections as per instructions.

Section-A

(Very Short Answer Questions)

Attempt all the *five* questions. Each question carries 3 marks. Very short answer is required. 3×5=15

1. Define the following with examples : 3

   (i) Proper subset

   (ii) Complement of a set

   (iii) What is the set $\{x : x \in R,\ x^2 = 9,\ 2x = 4\}$?

2. Let $f : A \to B$ such that $f(x) = x - 1$ and $g : B \to C$ such that $g(y) = y^2$. Find $fog(y)$. 3

3. Show that a linearly ordered poset is a distributive lattice. 3

4. If $u = \tan^{-1}\left(\frac{y}{x}\right)$, show that $x\frac{\partial u}{\partial x} + y\frac{\partial u}{\partial y} = 0$. 3

5. Evaluate $\int_0^{\pi/2}\int_0^{\sin\theta} r d\theta dr$. 3

Section-B

(Short Answer Questions)

Attempt any *two* questions out of the following three questions. Each question carries 7½ marks. Short answer is required. 7½×2=15

6. Show that the direction cosines of a line whose direction ratios are a, b, c are : 7½

$$\frac{a}{\sqrt{a^2+b^2+c^2}}, \frac{b}{\sqrt{a^2+b^2+c^2}}, \frac{c}{\sqrt{a^2+b^2+c^2}}.$$

7. In a group of 50 people, 35 speak Hindi, 25 speak both English and Hindi and all people speak at least one of the two languages. How many people speak only English and not Hindi? How many speak English ? 7½

8. Show that $\sin x(1+\cos x)$ is a maximum at $x=\frac{\pi}{3}$. 7½

Section-C

(Detailed Answer Questions)

Attempt any *three* questions out of the following five questions. Each question carries 15 marks. Answer is required in detail. 15×3=45

9. Find the acute angle between two lines whose direction cosines are given by the relation $l+m+n=0$ and $l^2+m^2-n^2=0$. 15

10. Change the order of integration : 15

$$\int_0^a \int_x^{a^2/x} \phi(x, y)dxdy.$$

11. (a) Evaluate $\int_0^a \int_0^{a-x} \int_0^{a-x-y} x^2 dxdydz$. 7½

(b) Evaluate $\int_0^1 \int_0^{x^2} e^{y/x} dxdy$. 7½

12. (a) Find the shortest distance between the lines: 7½

$$\frac{x-1}{2}=\frac{y-2}{3}=\frac{z-3}{4} \text{ and } \frac{x-2}{3}=\frac{y-4}{4}=\frac{z-5}{5}.$$

(b) Show that the plane $2x-2y+z+12=0$ touches the sphere $x^2+y^2+z^2-2x-4y+2z-3=0$. 7½

13. (a) Transform the equation $x^4\left(\frac{d^2y}{dx^2}\right)+a^2y=0$ by the substitution $x=\frac{1}{z}$. 7½

(b) If $f(x)=\log\left(\frac{1+x}{1-x}\right)$, show that : 7½

$$f(x)+f(y)=f\left(\frac{x+y}{1+xy}\right).$$

(20518) Roll No. .....

BCA-II Sem.

18008

B. C. A. Examination, May 2018

Organizational Behaviour

(BCA-203)

(New)

Time : Three Hours] *[Maximum Marks : 75*

Note : Attempt questions from all Sections as per instructions.

Section-A

(Very Short Answer Questions)

Answer all the *five* questions. Each question carries 3 marks. Very short answer is required . 3×5=15

1. Define Scientific Management.

2. What is Job Satisfaction ?

3. What do you mean by Job enrichment ?

4. Explain Recruitment.

5. Define the levels of conflicts.

Section-B

(Short Answer Questions)

Answer any *two* questions out of the following three questions. Each question carries 7½ marks. Short answer is required. 7½×2=15

6. Compare and contrast two different approaches to personality.

7. What are the methods adopted to prevent and manage stress ?

8. Give a detailed account on emergence of informal leaders and working norms in Indian organizations.

Section-C

(Detailed Answer Questions)

Answer any *three* questions out of the following five questions. Each question carries 15 marks. Answer is required in detail. 15×3=45

9. "The study of Organizational Behaviour is essential for all managers." Justify the statement by explaining its nature and scope.

10. Explain the factors influencing perception and the relevance of impression management in an organization.

11. What are the functions performed by groups ? How can group decisions be made more effective ?

12. What do you mean by conflict ? Define the conflict resolution techniques.

13. Write short notes on the following :

(a) Maslow's need hierarchy theory of motivation

(b) Traits approach of leadership.