19COA101 Reg No : .....

CHOICE BASED FIRST SEMESTER B.C.A. DEGREE EXAMINATION FEBRUARY 2021

Fundamentals of Computers

Duration:3 Hours **Max Marks:80**

Instruction to Candidates

1. Answer **ALL** the questions strictly observing the internal choice provided
2. Write your Register Number on the question paper in the space provided only
3. **DO NOT** scribble or make any kind of markings on the Question Paper

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I. Answer any FIVE of the following : **(5*2= 10 Marks)**

1. Write a note on ALU.
2. What is a minicomputer? Give an example.
3. Define Seek Time.
4. Name the two ways to create microfilms?
5. List any four benefits of flowchart.
6. Differentiate system software and application software.

II. Answer any FIVE of the following : **(5*6= 30 Marks)**

7. Explain how does a processor communicates with the I/O devices.
8. Write a note on optical mouse.
9. Who are the users of MIS ? Explain.
10. Write a short note on Ports and interfaces.
11. What is a CD? What are the different formats of a CD? Explain.
12. What is goal displacement?Why does it occur?

III. Answer any FOUR of the following : **(4*10= 40 Marks)**

13. Write a short note on : a) Registers b) Control Unit

14. (a) Explain various types of OS. (b) Explain briefly the evolution of operating system.

15. a) Explain any five characteristics of a good programming language. b) Write a note on machine language.

16. What are the types of memory available in the computer system? How are they organised in a hierarchy?

17. (a) Explain the functions of an oprating system. (b) Explain the various types of user interfaces in OS.

19COA102 Reg No : .....

CHOICE BASED FIRST SEMESTER B.C.A. DEGREE EXAMINATION FEBRUARY 2021

Basic concepts of Programming in C

Duration:3 Hours **Max Marks:80**

I. Answer any FIVE of the following : **(5×2= 10 Marks)**

1. Write any four arithmetic operators in C.
2. Write the output for the following: a) ceil(6.7) b) floor(5.6)
3. What is the significance of continue statement in C? Give an example.
4. What is the purpose of getchar() and putchar() function?
5. Write the syntax of unions in C.
6. How do you declare a string variable in C? Give an example.

II. Answer any FIVE of the following : **(5×6= 30 Marks)**

7. Explain the basic structure of C programming language.
8. Explain with examples
   a) Integer datatype
   b) Floating point datatype
   c) Character datatype
9. How do you read elements in two dimensional array? Explain with syntax and example.
10. Explain do-while loop with syntax and example.
11. What is an external variable? Explain with its syntax and example.
12. Explain array of structures with an example.

III. Answer any FOUR of the following : **(4×10= 40 Marks)**

13. Explain with examples
    a) Integer and Real constants
    b) Character and String constants
14. a) What are symbolic constants? Explain #define with syntax and example. b)Write a note on i) Implicit type conversion ii) Explicit type conversion
15. a) Explain switch statement with an example.
    b) Explain conditional operator with an example.
    c) Rewrite the following if-else statement using conditional operator if(a<b) min=a; else min=b;
16. Explain with syntax and example
    a) if statement
    b) if-else statement
17. a) What is a structure? Explain with its syntax and example.
    b) Differentiate arrays and structures.

19COA103 Reg No : .....

CHOICE BASED FIRST SEMESTER B.C.A. DEGREE EXAMINATION FEBRUARY 2021

COMPUTER APPLICATIONS

Fundamentals of Mathematics I

Duration:3 Hours **Max Marks:80**

I. Answer any EIGHT of the following : **(8×3= 24 Marks)**

1. If $A=\begin{bmatrix} 2 & 3 \\ 4 & 6 \end{bmatrix}$, then find A^{-1} if it exists.
2. Resolve into partial fractions: $\frac{2}{(x-1)(x-2)}$
3. Find the middle term or middle terms in the expansion of $(2x^3 - \frac{1}{x})^{12}$
4. Convert 135 degrees into radians.
5. Find the length of the perpendicular drawn from the point $(3,5)$ to the line $6x - 8y + 11 = 0$.
6. Find the slope of the line joining the points $(2,4)$ and $(4,1)$.
7. Find the equation to the line passing through the origin and making an angle $150°$ with the positive x-axis.
8. Find the value of x for which the points $(x,-1)$, $(2,1)$ and $(4,5)$ lie on a line.
9. Find the eccentricity of the ellipse $16x^2 + 25y^2 = 400$.
10. Draw and plot the vertex and focus of the parabola $y^2 + 8x = 0$.

II. Answer any EIGHT of the following : **(8×7= 56 Marks)**

11. Solve the following system of equations by Cramer's rule:
$7x + 6y - 5z = 30, \quad 3x - 4y + z = 0, \quad x + 2y - 3z = 10$
12. If $A=\begin{bmatrix} 2 & 4 \\ -1 & 2 \end{bmatrix}$, $B=\begin{bmatrix} 1 & 0 \\ 2 & 1 \end{bmatrix}$, determine whether $A^2 - B^2 = (A+B)(A-B)$?

13. Solve the following system of equations by matrix method
$2x + z + 1 = 0, \quad 2y + x - 5 = 0, \quad z - y + 2 = 0$

14. Resolve $\frac{x^2+1}{x(x^2+2)}$ into partial fractions.

15. Prove that $tan315°.cot(-405°) + cot(495°).tan(-585°) = 2$

16. Show that the points $(2, -3), (6, 5), (-2, 1)$ and $(-6, -7)$ taken in order are the vertices of a rhombus.

17. Find the co-ordinates of the points which divide the line joining the points $(-7, 1)$ and $(3, 6)$
(i) internally in the ratio 3:2.
(ii) externally in the ratio 3:2.

18. Given $A(6, 1), B(3, 7), C(-7, 2)$ and $D(-4, 4)$. Verify that AB is perpendicular to BC.

19. Find the centre and radius of the circle $x^2 + y^2 + 8x + 4y - 5 = 0$.

20. Find the centre, vertices, length of transverse and conjugate axes, length of latus rectum, eccentricity, foci, directrices and the end points of the latus rectum of the hyperbola $x^2 - y^2 = 4$.

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19GVE101 Reg. No. .....

CHOICE BASED SEMESTER SYSTEM FIRST SEMESTER B.A./B.Sc./B.Com/B.B.A/B.C.A
DEGREE EXAMINATION FEBRUARY 2021

GENERAL EDUCATION – I

Indian Constitution

Time: 3 Hrs **Max. Marks: 40**

1. The Governor of a State is appointed by the President on the advice of the
(a) Prime Minister
(b) Vice-President
(c) Chief Minister
(d) Chief Justice

2. The President gives his resignation to the
(a) Chief Justice
(b) Parliament
(c) Vice President
(d) Prime Minister

3. For what period does the Vice President of India hold office?
(a) 5years
(b) Till the age of 65 years
(c) 6years
(d) 2 years

4. Who among the following holds office during the pleasure of the President?
(a) Governor
(b) Election Commissioner
(c) Speaker of Lok Sabha
(d) Prime Minister

5. Which of the following is not true regarding the payment of the emoluments of the President?
(a) They can be reduced during a Financial Emergency.
(b) They are shown separately in the budget.
(c) They are charged on the Contingency Fund of India.
(d) They do not require any parliament sanction.

6. The total number of members nominated by the President to the Lok Sabha and the Rajya Sabha is
(a) 16
(b) 18
(c) 14
(d) 12

7. Which one of the following does not constitute the electoral college for electing the President of India?
(a) Elected members of Lok Sabha
(b) Elected members of the Legislative Assembly of each state.
(c) Elected members of the Legislative Council
(d) Elected members of Rajya Sabha

16. In case a President dies while in office, the vice President can act as President for a maximum period of
(a) 1years
(b) 3months
(c) 6months
(d) 2 years

17. The Union Council of Ministers consists of
(a) Cabinet Ministers, Minister of State and Deputy Ministers
(b) Cabinet Ministers and Chief Ministers of the States
(c) Prime Minister
(d) Cabinet Ministers

18. Who administers the oath of office to the President of India before he enters upon the office?
(a) Chief Justice
(b) Speaker
(c) Vice President
(d) Prime Minister

19. Who among the following enjoys the rank of a Cabinet Minister of the Indian Union?
(a) None of the Above
(b) Deputy Chairman of the Planning Commission
(c) Deputy Chairman, Rajya Sabha
(d) Secretary to the Government of India

20. A person who is not a member of Parliament can be appointed as a Minister by the President for a maximum period of
(a) 9months
(b) 3months
(c) 12months
(d) 6 months

21. The Indian constitution ts
a) Based on conventions.
b) A brief document.
c) An evolved constitution.
d) Written and bulky document.

22. The constituent assembly adopted the Indian constitution on
a) August 15, 1947.
b) November 26, 1949.
c) January 26, 1950.
d) January 26, 1948.

23. The government of India Act 1935 provided for
a) Diarchy at the center.
b) Establishment of federal court.
c) Provincial autonomy.
d) All of the above.

16. In case a President dies while in office, the vice President can act as President for a maximum period of
(a) 1years
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23. The government of India Act 1935 provided for
a) Diarchy at the center.
b) Establishment of federal court.
c) Provincial autonomy.
d) All of the above.

24. India is a sovereign, socialist, secular, democratic, republic. This expression occurs in
a) Fundamental rights.
b) Citizenship.
c) Preamble
d) Directive principles.

25. The ultimate source of authority in India
a) The people.
b) The government.
c) The constitution.
d) The parliament.

26. The constitution of India declares India as
a) A unitary state.
b) A federation
c) A quasi-federal state
d) A union of states.

27. The constitution of India is
a) Unitary in form but federal in spirit.
b) Unitary with strong federal bias.
c) Is full of strong unitary features.
d) Federal in form but unitary in spirit.

28. The President of the constituent assembly of India was
a) Pandith Jawaharlal Nehru.
b) Dr. Babu Rajendra Prasad.
c) Mahathma Mohandas K Gandhi.
d) Dr. B.R. Ambedkar.

29. In the Indian constitution, the fundamental rights
a) Were added by the first amendment.
b) Were added by the 42™ amendment.
c) Formed a part of the original constitution.
d) None of the above.

30. The fundamental rights granted by the Indian constitution to its citizens cannot be suspended
a) Except by an order of the President during national emergency.
b) Except through an order of the President during war.
c) Except by an order of the Supreme Court.
d) Under any circumstances.

31. Which of the following is no longer a fundamental right?
a) Right to liberty.
b) Right to equality.
c) Right to freedom of religion.
d) Right to property.

32. The constitution of India says 'untouchability' is abolished and its practice in any form is prohibited. This is provided under

a) Right to equality.
b) Right to liberty.
c) Right against exploitation.
d) Right to constitutional remedies.

33. The basic feature of the Indian Constitution is found in

a) Fundamental Rights
b) Fundamental Duties
c) Preamble
d) DPSP

34. Original constitution classified fundamental rights into seven categories but now there are,

a) Eight
b) Six
c) Regrouped into social, economic and political _
d) Five

35. Writ of prohibition cannot be issued against the:

a) Judicial functions __
b) Legislative functions
c) Acts of lower courts
d) d) Quasi - Judicial functions

36. The inclusion of Fundamental Duties in the Constitution was

(a) Unanimously welcomed.
(b) Welcomed by the opposition parties only.
(c) Welcomed by the ruling only.
(d) None of the above.

37. Which of the following rights can be claimed only by the citizens and not by aliens within the territory of India?

I. Freedom of speech.
II. Right to form associations of Unions.
III. Equality before law.
IV. Freedom to assemble peacefully without arms.

Select the correct answer using the codes given below: Codes:

(a) I, II and III.
(b) II, III and IV.
(c) I, II and IV.
(d) I, III and IV.

38. To whom among the followings is the Right against exploitation guaranteed by the Indian Constitution?

I. Children.

II. Tribals.

III. Women.

IV. Harijans.

Select the correct answer using the following codes:

(a) I and III.

(b) II and IV.

(c) III and IV.

(d) I and II.

39. If the land belonging to a poor man is appropriated by the government without compensation, he cannot directly approach the High Court for redress because the

(e) Cost involved are exorbitant.

(f) Right to property is a legal right.

(g) Court have been deprived of the power to determine compensation.

(h) Matter is outside their jurisdiction.

40. The Constitution of which one of the following countries specifically recognizes that the State has a moral responsibility to provide employment to its citizens?

(a) Great Britain.

(b) India.

(c) U.S.S.R.

(d) U.S.A.

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GVE101.2

Reg. No. .....

CREDIT BASED FIRST SEMESTER B.A./B.Sc./B.Com/B.B.A/B.C.A DEGREE EXAMINATION FEBRUARY 2021

GENERAL EDUCATION – I

Indian Constitution

Time: 3 Hrs **Max. Marks: 80**

I. Answer any four of the following: **4×5=20**

1. Explain the significance of Indian Constitution.
2. Mention the principles of DPSP.
3. Write a note on Constituent Assembly.
4. What is Preamble? Mention its contents.
5. Explain the role of Cabinet.
6. What is impeachment and explain its process?

II. Answer any Two of the following: **2×10=20**

7. Critically evaluate the fundamental duties.
8. Explain about right to religion.
9. What are the powers and functions of Prime Minister of India?
10. Briefly explain the Law Making Procedure.

III. Answer any Two of the following: **2×20=40**

11. Elaborate the salient features of Indian Constitute.
12. Elucidate the role and position of Governor of the state.
13. Explain the Fundament Rights with examples.
14. Narrate the committees and work of constituent assembly.
15. Explain the powers and functions of Lokasabha and Rajyasabha.

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18MAT102

Reg No : .....

CHOICE BASED FIRST SEMESTER B.C.A. DEGREE EXAMINATION FEBRUARY 2021
COMPUTER APPLICATIONS
Fundamentals of Mathematics I

Duration:3 Hours **Max Marks:80**

I. Answer any EIGHT of the following : **(8×3= 24 Marks)**

1. If $A = \begin{bmatrix} 2 & 3 \\ 4 & 6 \end{bmatrix}$, then find A^{-1} if it exists.
2. Resolve into partial fractions: $\frac{2}{(x-1)(x-2)}$
3. Find the middle term or middle terms in the expansion of $(2x^3 - \frac{1}{x})^{12}$
4. Convert 135 degrees into radians.
5. Find the length of the perpendicular drawn from the point $(3, 5)$ to the line $6x - 8y + 11 = 0$.
6. Find the slope of the line joining the points $(2, 4)$ and $(4, 1)$.
7. Find the equation to the line passing through the origin and making an angle $150°$ with the positive x-axis.
8. Find the value of x for which the points $(x, -1), (2, 1)$ and $(4, 5)$ lie on a line.
9. Find the eccentricity of the ellipse $16x^2 + 25y^2 = 400$.
10. Draw and plot the vertex and focus of the parabola $y^2 + 8x = 0$.

II. Answer any EIGHT of the following : **(8×7= 56 Marks)**

11. Solve the following system of equations by Cramer's rule:
$7x + 6y - 5z = 30, \quad 3x - 4y + z = 0, \quad x + 2y - 3z = 10$
12. If $A = \begin{bmatrix} 2 & 4 \\ -1 & 2 \end{bmatrix}$, $B = \begin{bmatrix} 1 & 0 \\ 2 & 1 \end{bmatrix}$, determine whether $A^2 - B^2 = (A + B)(A - B)$?

13. Solve the following system of equations by matrix method
$2x + z + 1 = 0, \quad 2y + x - 5 = 0, \quad z - y + 2 = 0$

14. Resolve $\frac{x^2+1}{x(x^2+2)}$ into partial fractions.

15. Prove that $tan315°.cot(-405°) + cot(495°).tan(-585°) = 2$

16. Show that the points $(2, -3), (6, 5), (-2, 1)$ and $(-6, -7)$ taken in order are the vertices of a rhombus.

17. Find the co-ordinates of the points which divide the line joining the points $(-7, 1)$ and $(3, 6)$
(i) internally in the ratio 3:2.
(ii) externally in the ratio 3:2.

18. Given $A(6, 1), B(3, 7), C(-7, 2)$ and $D(-4, 4)$. Verify that AB is perpendicular to BC.

19. Find the centre and radius of the circle $x^2 + y^2 + 8x + 4y - 5 = 0$.

20. Find the centre, vertices, length of transverse and conjugate axes, length of latus rectum, eccentricity, foci, directrices and the end points of the latus rectum of the hyperbola $x^2 - y^2 = 4$.

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19COA302 Reg No : .....

CHOICE BASED THIRD SEMESTER B.C.A. DEGREE EXAMINATION FEBRUARY 2021

Internet Programming

Duration:3 Hours **Max Marks:80**

I. Answer any FIVE of the following : **(5×2= 10 Marks)**

1. What are javascript datatypes.
2. What is empty HTML Element?
3. What are sub procedures in VBScript?
4. What is CSS? Explain.
5. List LOGICAL operators in VBScript.
6. What is element id?

II. Answer any FIVE of the following : **(5×6= 30 Marks)**

7. a) Explain javascript assignment operators.
   b) Explain javascript logical operators.
8. Explain IF .. ELSE, IF ....ELSEIF statements in VBScript.
9. Write a note on FOR ....NEXT , FOR EACH ....NEXT with example in VBScript.
10. a) Explain inline style with example
    b) Explain internal styles with example.
11. a) What is an HTML element?
    b) Write a note on HTML editors.
12. Explain STYLE attribute with example.

III. Answer any FOUR of the following : **(4×10= 40 Marks)**

13. a) Explain various attributes of tag <IMG>.
    b) Explain HTML RGB, RGBA colors.
14. Explain any 8 string functions in VBScript.
15. Explain XML structure.
16. a) Explain the various values of TARGET attribute in HTML hyperlinks.
    b) Explain Hyperlinks in HTML.
17. Explain any 8 date functions in VBScript.

19COA303 Reg No : .....

CHOICE BASED THIRD SEMESTER B.C.A. DEGREE EXAMINATION FEBRUARY 2021

COMPUTER APPLICATIONS

Operating Systems

Duration:3 Hours **Max Marks:80**

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nstruction to Candidates

1. Answer **ALL** the questions strictly observing the internal choice provided
2. Write your Register Number on the question paper in the space provided only
3. **DO NOT** scribble or make any kind of markings on the Question Paper

I. Answer any FIVE of the following : **(5*2= 10 Marks)**

1. Write any two services of an operating system.
2. Define operating system. Give an example.
3. How does the system eliminate deadlocks by using resource preemption?
4. What is a resource allocation graph?
5. Write any two operations performed on a file.
6. What is virtual memory?

II. Answer any FIVE of the following : **(5*6= 30 Marks)**

7. Explain preemptive and nonpreemptive scheduling.
8. Explain PCB with a neat diagram.
9. Explain the usage of semaphores.
10. Explain any two methods to avoid deadlock in the system.
11. Consider the following page reference string 1,2,3,4,2,1,5,6,2,1,2,3,7,6,3,2,1,2,3,6 Find the page faults that occur if we use a) LRU b) Optimal page replacement algorithms using 3 frames.
12. Explain acyclic-graph directory structure with a neat diagram.

III. Answer any FOUR of the following : **(4*10= 40 Marks)**

13. Draw Gantt chart and calculate the Average Waiting Time for the following 4 processes using: a) First Come First Serve scheduling algorithm. b) Priority scheduling algorithm. c) Round Robin scheduling algorithm (Time quantum = 3ms) Process P1 P2 P3 P4 Burst Time 5 3 6 4 Priority 3 1 2 1

14. a) Explain process scheduling with the help of queueing diagram. b) Explain i) Long term scheduler ii) Short term scheduler

15. a) Explain internal and external fragmentation with a help of an example. b) Explain memory protection with a neat diagram.

16. a) Explain paging hardware TLB with a neat diagram. b) Explain segmentation with a neat diagram.

17. a) Explain indexed allocation with a neat diagram. b) Write a note on free space management.

19COA301 Reg No : .....

CHOICE BASED THIRD SEMESTER B.C.A. DEGREE EXAMINATION FEBRUARY 2021

COMPUTER APPLICATIONS

Object Oriented Programming Concepts & Programming using Java Theory

Duration:3 Hours **Max Marks:80**

I. Answer any FIVE of the following : **(5×2= 10 Marks)**

1. List the relational operators in java.
2. What is a statement in java? List any two types of statements.
3. How does java ensure portability?
4. Write the general form of a method declaration.
5. Give an example to declare and create a two dimensional array
6. What are compile time errors?

II. Answer any FIVE of the following : **(5×6= 30 Marks)**

7. What are objects? Differentiate between object behaviour and methods.
8. Explain simple if and if else statements with syntax and example.
9. What is typecasting? Explain with examples.
10. What is overriding of methods? Explain with a suitable example.
11. Write a program to extract a portion of a character string and print the extracted string. Assume that m characters are extracted, starting with the nth character.
12. Describe the different stages in the life cycle of an applet. Distinguish between init() and start() methods.

III. Answer any FOUR of the following : **(4×10= 40 Marks)**

13. Explain:
    a) Encapsulation and information hiding
    b) class hierarchy
14. Explain with syntax and example the following:
    a) While loop
    b) do...while loop
15. Explain the following inheritance:
    a) single inheritance
    b) multilevel inheritance
16. Give an example where interface can be used to support multiple inheritance.
17. Explain:
    a) How to create a thread by extending from the class java.lang.Thread?
    b) How threads can be implemented using the 'runnable' interface?

19COA301 Reg No : .....

CHOICE BASED THIRD SEMESTER B.C.A. DEGREE EXAMINATION FEBRUARY 2021

COMPUTER APPLICATIONS

Object Oriented Programming Concepts & Programming using Java Theory

Duration:3 Hours **Max Marks:80**

I. Answer any FIVE of the following : **(5×2= 10 Marks)**

1. List the relational operators in java.
2. What is a statement in java? List any two types of statements.
3. How does java ensure portability?
4. Write the general form of a method declaration.
5. Give an example to declare and create a two dimensional array
6. What are compile time errors?

II. Answer any FIVE of the following : **(5×6= 30 Marks)**

7. What are objects? Differentiate between object behaviour and methods.
8. Explain simple if and if else statements with syntax and example.
9. What is typecasting? Explain with examples.
10. What is overriding of methods? Explain with a suitable example.
11. Write a program to extract a portion of a character string and print the extracted string. Assume that m characters are extracted, starting with the nth character.
12. Describe the different stages in the life cycle of an applet. Distinguish between init() and start() methods.

III. Answer any FOUR of the following : **(4×10= 40 Marks)**

13. Explain:
    a) Encapsulation and information hiding
    b) class hierarchy
14. Explain with syntax and example the following:
    a) While loop
    b) do...while loop
15. Explain the following inheritance:
    a) single inheritance
    b) multilevel inheritance
16. Give an example where interface can be used to support multiple inheritance.
17. Explain:
    a) How to create a thread by extending from the class java.lang.Thread?
    b) How threads can be implemented using the 'runnable' interface?

18COA304 Reg. No. ----------

CREDIT BASED THIRD SEMESTER B.C.A. DEGREE EXAMINATION FEBRUARY 2021

COMPUTER NETWORKS

Duration: 3 Hrs. Max. Marks: 120

1. Answer any 15 questions from the following. (15x2=30)

a) What do you mean by data communication?
b) What is half duplex with respect to data flow?
c) Define transmission medium.
d) What is encapsulation?
e) What do you mean by local logging and remote logging?
f) What are nodes and links?
g) What is point-to-point protocol?
h) What is throughput?
i) What is fragmentation?
j) What is CSMA/CD?
k) What is a hub? In which layer does it operate?
l) Mention the services provided by PPP.
m) Why ICMPv4 is designed?
n) How many bits are used in IPv4 and IPv6 addressing?
o) What is dynamic document?
p) What is unicast address and multicast address?
q) Differentiate between unicast and multicast transmission.
r) What do you mean by processing delay and queuing delay?

PART – B

Answer any TWO questions from each unit:

UNIT-I

2. a) Write a note on i) Radio waves ii) Microwaves
b) Define physical topology. Explain Bus and Ring topology. (8+7)

3. a) With diagram explain:
i) A frame and character-oriented protocol
ii) A frame in a byte-oriented protocol
b) Write a note on High-Level Data Link Control (HDLC) (8+7)

4. a) Explain in detail Coaxial Cable in detail.
b) What is Address resolution Problem? Explain. (8+7)

UNIT-II

5. a) Explain the three methods that can be devised for communication between switches.
   b) Write a short note on i) CDMA ii) TDMA (7+8)

6. a) With the help of a diagram, explain IP datagram packet format.
   b) Explain i) Classful addressing ii) Classless addressing (7+8)

7. a) Explain the various services offered by network layer
   b) Explain the datagram approaches and virtual circuit approaches to route the data packet. (7+8)

UNIT-III

8. a) Write a note on i) HTTP ii) WWW
   b) Explain Go-Back-N protocol. (8+7)

9. a) Explain IPv6 packet format.
   b)Write the steps to be followed to map the hostname to an IP address. (8+7)

10. a) Explain the various services provided by transport layer.
    b) Write note on ICMPv6 protocol. (8+7)

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COA301.1 Reg. No. _____

CREDIT BASED THIRD SEMESTER B.C.A DEGREE EXAMINATION FEBRUARY 2021

OBJECT ORIENTED PROGRAMMING CONCEPTS AND PROGRAMMING USING ++

Duration : 3Hrs **Max.Marks:100**

PART A

1. ANSWER ANY 11 QUESTIONS FROM THE FOLLOWING **11X2=22**

a) What is an attribute? List any two attributes of student object?
b) What is an inline function?
c) Write the use of scope resolution operator.
d) What do you mean by default argument? Give an example.
e) What is function prototyping? Give example.
f) What are per-class protection and per-object protection?
g) Why do we need a destructor? Define destructor for a class named complex.
h) What do you mean by data abstraction and encapsulation?
i) List any two characteristics of constructor function.
j) Differentiate between compile time and run time polymorphism.
k) When do we use protected visibility specifier to a class member?
l) What is 'this' pointer?
m) What is a friend function? When is it required?

PART B

ANSWER ANY <u>TWO FULL</u> QUESTIONS FROM EACH UNIT.

UNIT I

2. A) Explain how object oriented approach different from traditional top-down approach?
   B) Explain any five characteristics of object oriented programming.
   C) What are the orthogonal views of software? [4+5+4]

3. A) Write a note on use-case approach.
   B) Write a note on encapsulation and data hiding.
   C) Explain Polymorphism with suitable example. [4+4+5]

4. A)With syntax and example ,explain the input and output statements used in C++.
   B)What are manipulators ? Explain any four manipulators with example.
   C) Explain how objects responds to messages. [4+5+4]

UNIT II

5. A) How is a member function of a class defined? Explain with an example.
   B) What is function overloading? Explain with an example.
   C) How can we pass objects as function arguments? Explain. [4+5+4]

6. A) With an example, explain how we can create an array of objects.
   B) Explain the benefits and applications of object oriented programming.
   C) What is meant by passing arguments by reference? Explain with an example. [5+4+4]

7. A) Explain the different data types available in C++ with an example.
   B) What is a friend function? Write the different properties of a friend function.
   C) Explain static data member and static member functions. [4+4+5]

UNIT III

8. A) What is Multilevel inheritance? Explain with example.
   B) Explain with example constructor overloading.
   C) Explain how we can achieve run-time polymorphism using virtual functions with suitable example. [5+4+4]

9. A) What is inheritance? Explain Single inheritance with suitable example.
   B) What is operator overloading? List any four rules for overloading an operator.
   C) Explain the different access specifiers. [4+5+4]

10. A) What is constructor? Explain with syntax and example, how constructor function is defined.
    B) Explain with an example, the concept of conversion between basic to class type.
    C) With suitable example, explain overloading an binary operator. [4+4+5]

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COA301.1 Reg. No. _____

CREDIT BASED THIRD SEMESTER B.C.A DEGREE EXAMINATION FEBRUARY 2021

OBJECT ORIENTED PROGRAMMING CONCEPTS AND PROGRAMMING USING ++

Duration : 3Hrs **Max.Marks:100**

PART A

1. ANSWER ANY 11 QUESTIONS FROM THE FOLLOWING 11X2=22

a) What is an attribute? List any two attributes of student object?
b) What is an inline function?
c) Write the use of scope resolution operator.
d) What do you mean by default argument? Give an example.
e) What is function prototyping? Give example.
f) What are per-class protection and per-object protection?
g) Why do we need a destructor? Define destructor for a class named complex.
h) What do you mean by data abstraction and encapsulation?
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l) What is 'this' pointer?
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PART B

ANSWER ANY TWO FULL QUESTIONS FROM EACH UNIT.

UNIT I

2. A) Explain how object oriented approach different from traditional top-down approach?
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4. A)With syntax and example ,explain the input and output statements used in C++.
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UNIT II

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18COA301.1 Reg. No. _____

CREDIT BASED THIRD SEMESTER B.C.A DEGREE EXAMINATION FEBRUARY 2021

OBJECT ORIENTED PROGRAMMING CONCEPTS AND PROGRAMMING USING ++

Duration : 3Hrs **Max.Marks:100**

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GVE 301.2

Reg. No. .....

CREDIT BASED THIRD SEMESTER B.A./B.Sc./B.Com./B.C.A DEGREE EXAMINATION FEBRUARY 2021

GENERAL EDUCATION – III

Human Rights & Women's Studies

Time: 3 Hrs **Max. Marks: 80**

I. Answer any four of the following: **4×5=20**

1. Explain the significance of Human Rights.
2. Write a note on Dowry Harassment.
3. What are the contributions of Amnesty International?
4. Mention the difference between condition of women in Vedic and Medieval period.
5. Write a note on 'Beti Bachavo, Beti Padavo'.
6. What are the reasons for increase of crimes against women?

II. Answer any Two of the following: **2×10=20**

7. Briefly explain the Right and privileges for women given by Indian Constitution.
8. Narrate the composition and powers of National Human Rights Commission.
9. Narrate any incident of Human Rights Violation in India.
10. What are Labour Laws? Mention Laws for women in the working sector.

III. Answer any Two of the following: **2×20=40**

11. Briefly elaborate the Universal Declaration of Human Rights.
12. Elucidate the multiple role played by woman.
13. Explain the measures taken by the Government for social and economic empowerment of women.
14. Explain the domestic and criminal laws to safeguard the women.
15. Explain about family laws with special reference to divorce and maintenance.

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18STA302 RegNo.

CREDIT BASED THIRD SEMESTER B.C.A. DEGREE EXAMINATION

OCTOBER 2019

STATISTICS – I

ELEMENTS OF DATA ANALYTICS

Time: 3 Hrs **Max. Marks: 80**

PART - A

Answer any TEN of the following: **10X2=20**

1. a) Write down the sample space when blood of husband and wife are tested and the blood Group (whether O,A, B or AB) in each is identified.

b) Define dependent event with an example.

c) State multiplication theorem of probability.

d) If $P(A) = \frac{1}{8}$, $P(B) = \frac{1}{6}$ & $P(A \cup B) = \frac{1}{4}$, find $P(A \cap B)$

e) Two fair coins are tossed once. Find the mathematical expectation of the numbers of heads obtained.

f) A bag has two one rupee coins and three ten paise coins. A boy picks a coin at random from the bag. What is the expectation of the amount he has picked?

g) Under what conditions Poisson distribution tends to normal distribution?

h) If $Q_1=20$, & $Q_3 = 50$ for a normal variate, what is its Q.D and S.D.

i) What is analysis of time series?

j) What are the different phases in a business cycle?

k) What is meant by seasonal variation? What are the factors causing seasonal variations in a time series?

l) What is meant by moving average method?

PART – B

Answer any TWO of the following: **2X10=20**

2. a) A box contains 5 red, 4 green & 3 blue marbles. Three marbles are drawn at random for this box. Find the probability that they are of
i) different colours ii) same colour.

b) The probabilities of a husband and his wife surviving for 20 more years are 0.8 & 0.9 respectively. Find the probability that after 20 years
i) both of them are alive. ii) atleast one of them is alive.

(5+5)

3. a) A purse contains 4 sliver and 2 gold coins. Another purse contains 3 silver & 4 gold coins. If a coin is selected at random from one of the two purses, what is the probability that it is a silver coin?

   b) A box contains twelve cards from 1 to 12. A card is drawn randomly from this box. What is the probability that it is an even number card, known that the number on the drawn card is of two digits.

(5+5)

4. a) What is the probability that there will be 53 Mondays in a randomly selected (i) Non leap year (ii) Leap year?

   b) The first box contains 2 red & 3 green marbles. The second box contains 4 red and 5 green marbles. One marble is transferred from the first box to the second and then one marble is drawn from the second box. Find the probability that it is green.

(5+5)

Answer any TWO of the following: **2x10=20**

5. Compute coefficient of correlation for the joint probability distribution.

X/Y	-3	0	3
-1	0.1	0.2	0.1
0	0.2	K	0.1
1	0.1	0.1	0.1

6. Five coins are tossed 200 times. In each toss, number of heads obtained is noted and the following distribution is obtained.

No. of heads	0	1	2	3	4	5
No. of tosses	1	16	48	68	51	16

Fit a Binominal distribution and obtain the theoretical frequencies.

7. a) The weights of 1000 students, are found to be normally distributed with mean 40 kgs & S.D 4 kgs. Find the number of students with weights.
   i) Less than 50 kgs ii) between 40 kgs and 45 kgs.

   b) Suppose that the shipping time follows an exponential distribution with average shipping time equal to 10 minutes.Find the probability that the loading time is
   i) less than or equal to 5 minutes
   ii) between 5 and 12 minutes.

(5+5)

Answer any TWO of the following: **2X10=20**

8. a) Calculate 4 yearly moving averages for the following time series.

Year	1983	1984	1985	1986	1987	1988	1989	1990
Production (000 tons)	30.1	45.4	39.3	41.4	42.2	46.4	46.6	49.2

b) Fit a straight line trend to the following data by the method of least squares and estimate the earning for 2020.

Year	2004	2006	2008	2010	2012	2014	2016	2018
Earnings (Lakh Rs.)	38.8	40	65	72	69	60	87	94.2

(5+5)

9. Fit a quadratic trend to the following time series and estimate the production for 2021.

Year	2011	2012	2013	2014	2015	2016	2017	2018	2019
Production (lakh tons)	2	6	7	8	10	11	11	10	9

10. a) Describe cyclical fluctuations in a time series. How does it differ from seasonal variation?

b) The data below gives the average quarterly prices of a commodity for four years. Find the seasonal indices.

Year	I Quarter	II Quarter	III Quarter	IV Quarter
1980	40.3	44.8	46.0	48.0
1981	50.1	53.1	55.3	59.5
1982	47.2	50.1	52.1	55.2
1983	55.4	59.0	61.6	65.3

(5+5)

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18STA302 RegNo.

CREDIT BASED THIRD SEMESTER B.C.A. DEGREE EXAMINATION

OCTOBER 2019

STATISTICS – I

ELEMENTS OF DATA ANALYTICS

Time: 3 Hrs **Max. Marks: 80**

PART - A

Answer any TEN of the following: **10X2=20**

1. a) Write down the sample space when blood of husband and wife are tested and the blood Group (whether O,A, B or AB) in each is identified.
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PART – B

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1982	47.2	50.1	52.1	55.2
1983	55.4	59.0	61.6	65.3

(5+5)

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18COA501 Reg No : .....

CREDIT BASED FIFTH SEMESTER B.C.A. DEGREE EXAMINATION FEBRUARY 2021

Python Programming

Duration:3 Hrs **Max Marks:100**

PART - A

I. Answer any SEVEN from the following: **(7×2= 14 Marks)**

1. Define FOR loop in Python.
2. What is Python IDLE Editor window.
3. Explain the append() method in lists.
4. What are LOCAL variable in Python?
5. What is operator overloading?
6. Write the command to save changes to the database
7. Mention the various assignment operators in Python.
8. How do you create a module in Python?

PART - B

II. Answer any SIX from the following: **(6×6= 36 Marks)**

9. Explain sets in Python.
10. a) Explain loop through a tuple.
    b) How can you check if a specified item exists in a tuple?
11. What is exception handling? Explain with an example.
12. How do you update rows from a table through python.
13. Explain defining a function in python.
14. Write a note on Frozen binaries.
15. a) Write the rules for python variables.
    b) Write a note on python indentation.

PART - C

III. Answer any FIVE from the following: **(5×10= 50 Marks)**

16. a) Explain rules for naming Python variables.
    b) How do you assign value to multiple variables?
    c) How do you assign same value to multiple variables
17. a) Mention the basic operations supported by an array in Python.
    b) Explain how to access array elements.]
    c) Explain Insert operation in an array.

18. a) Explain how to create a class & object with example.
    b) Explain _init_ () function with an example.

19. a) Explain how to remove an item from a set.
    b) add item in a set
    c) update() method in a set.

20. Explain with example use of lambda with filter .

21. Explain the relational & logical operators in python.

18COA502 Reg No : .....

CREDIT BASED FIFTH SEMESTER B.C.A. DEGREE EXAMINATION FEBRUARY 2021

Web Programming with ASP.Net

Duration:3 Hrs **Max Marks:100**

PART - A

I. Answer any SEVEN from the following: **(7×2= 14 Marks)**

1. Mention the different versions of ASP.NET.
2. What do you mean by postback?
3. How can you give hot key functionality to a label server control?
4. What is the usage of CompareValidator Control?
5. List the type of nodes in a TreeView Control.
6. Write a note on DeclarativeCatalogPart.
7. Write a note on ConnectionsZone.
8. Write any two public properties of GridView Control.

PART - B

II. Answer any SIX from the following: **(6×6= 36 Marks)**

9. Explain provider model in ASP.NET.
10. Explain the methods used to store state information at client end.
11. What is a server control? Explain its types.
12. What is PasswordRecovery control? Explain any three public properties of PasswordRecovery control.
13. How you add advertisements in your web application? Explain with a help of an example.
14. Explain XmlDataSource control with its public property and methods.
15. What are themes? Explain the different types of themes.

PART - C

III. Answer any FIVE from the following: **(5×10= 50 Marks)**

16. What are the different application location options available in ASP.NET?
17. Explain a) Application Domain b) Application Lifetime c) Application Directory Structure
18. Explain i) RequiredFieldValidator Control ii) RegularExpression Validation Control
19. Write a note on a) Image server control b) Table server control
20. a)Write a note on ADO.NET.
    b)Explain i) DataAdapters ii) Datasets
21. Explain with any three properties
    i) SqlDataSource control ii) ObjectDataSourceControl

18COA503 Reg No : .....

CREDIT BASED FIFTH SEMESTER B.C.A. DEGREE EXAMINATION FEBRUARY 2021

Microprocessor Programming

Duration:3 Hrs **Max Marks:100**

PART - A

I. Answer any SEVEN from the following: **(7×2= 14 Marks)**

1. What are the two ways that BCD information is stored?
2. Write any two features of 8086 Microprocessors.
3. What is the use of EQU macro definition directive?
4. State the rules for naming the variables in 8086.
5. What is the use of the interrupt- INT 04H?
6. Write the function of LOOP instruction.
7. What is the function of the Execution Unit?
8. Write the function of the instruction SBB.

PART - B

II. Answer any SIX from the following: **(6×6= 36 Marks)**

9. Explain in detail the four Segment Registers .
10. Write an assembly language program to find the largest and smallest number in an array.
11. Explain the operations of various shift instructions with examples.
12. Explain the following porcessor control instructions: i) STD ii)CMC
13. Explain the instructions: (i) XCHG (ii) LAHF (iii) LES
14. What is an addressing mode? Explain Relative Based Indexed Addressing mode and Direct Addressing mode.
15. Explain how interrupt works in 8086.

PART - C

III. Answer any FIVE from the following: **(5×10= 50 Marks)**

16. With a neat diagram, explain the Flag Register.
17. (a) Explain the Branch Displacement Directives with suitable examples.
    (b) Explain the directives: (i) INCLUDE (ii) EXTRN (iii)PUBLIC
18. Explain the string transfer instructions with examples.
19. (a) Explain the instruction types with examples.
    (b) Differentiate between Zero operand instruction and Two operand instruction
20. (a) Explain the different program organization directives with suitable examples. (b) With syntax and example, explain (i) LENGTH (ii) OFFSET

COA504.4 Reg. No.....

CREDIT BASED FIFTH SEMESTER B.C.A. DEGREE EXAMINATION FEBRUARY 2021
B.C.A
DATA MINING

Duration: 3 Hrs. Max. Marks: 80

PART – A

1. Answer any TEN questions: **10×2=20**

a) What is DM?
b) Expand MLP.
c) Mention any two differences between DM and DBMS.
d) What is CART?
e) Define data cube.
f) What is data mart?
g) What is unsupervised learning?
h) Define web usage mining.
i) What is regression analysis?
j) What is the importance of text mining?
k) What is base cuboid?

PART – B

Answer any TWO from each unit:

UNIT – I

2. a) Explain the Architecture of OLAP data cube.
b) Differentiate DM and DBMS. **[6 + 4]**

3. a) Explain different types of warehouse schemas.
b) Explain the different areas of DM. **[6 + 4]**

4. a) Explain the supervised and unsupervised learning with real world applications.
b) Write a note on mining problems for different types of data. **[6 + 4]**

UNIT – II

5. a) Explain the apriori algorithms.
b) Differential between agglomerative and divisive clustering. **[6 + 4]**

6. a) What is decision tree? Explain its advantages.
b) Write a note on splitting criteria. **[6 + 4]**

7. a) What is Clustering? Explain the different types of clustering techniques.
b) What is classification? **[6 + 4]**

UNIT – III

8. a) Explain the genetic algorithms with reproduction cycle.
b) What is rough-sets? Explain. **[6 + 4]**

9. a) Explain the Neural network and its different types.
b) What is MLP? **[6 + 4]**

10. a) Explain neural network perceptron.
b) Write a note on SVM. **[6 + 4]**

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18COA522 Reg No : .....

CREDIT BASED SEMESTER SYSTEM

B.C.A.
FIFTH SEMESTER DEGREE EXAMINATION FEBRUARY 2021
INTERNET OF THINGS

Duration:3 Hours **Max Marks:80**

Instruction to Candidates

1. Answer **ALL** the questions strictly observing the internal choice provided
2. Write your Register Number on the question paper in the space provided only
3. **DO NOT** scribble or make any kind of markings on the Question Paper

I. Answer any FIVE of the following : **(5*2= 10 Marks)**

1. Name any two technologies of the Internet of Things.
2. List the challenges involved in processing all the big data gathered via the IoT
3. What is IEEE 802.11?
4. Give an example for level-4 IoT system.
5. What is the advantage of using Wireless Sensor Networks?
6. What is the function of a centralised network controller in SDN?

II. Answer any FIVE of the following : **(5*6= 30 Marks)**

7. Explain any two wireless technologies used to connect devices in IoT.
8. Explain the REST architectural constraints.
9. Explain the following communication models with the help of figures:
   a) Push-Pull b) Exclusive Pair
10. What is big data? Explain the characteristics of big data with examples.
11. What are the service specifications in the IoT system design methodology? Explain with regard to a home automation system.
12. Write a note on NETCONFprotocol.

III. Answer any FOUR of the following : **(4*10= 40 Marks)**

13. What kind of things can be connected to the Internet of Things and what do all those connected things do?
14. Explain the applications of IoT in Environment.
15. Explain the following IoT levels with figures: IoT Level-1 b) IoT Level-2 c) IoT Level-5 d) IoT Level-6
16. Explain the following with a figure: a) M2M system architecture b) M2M gateway
17. Explain YANG with an example.

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CREDIT BASED FIFTH SEMESTER B.C.A. DEGREE EXAMINATION FEBRUARY 2021

E - Commerce

Duration:3 Hours **Max Marks:80**

I. Answer any FIVE of the following : **(5×2= 10 Marks)**

1. Write any two functions of E-markets.
2. What is online marketing?
3. What do you understand by the term Mobile Payments?
4. What is an Adware?
5. What do you understand by Breach of Contract?
6. State any 2 principle legislations with respect to Advertising Regulations.

II. Answer any FIVE of the following : **(5×6= 30 Marks)**

7. Explain the functions of communities on web.
8. What are the key ways to maximize visibility on search engines? Explain.
9. Explain the basic elements that define an Enterprise-wide security framework.
10. Explain the architectural components of CRM solution.
11. Write the characteristics of SCM.
12. Define Supply Chain Management. With a neat diagram explain different categories of Supply Chain.

III. Answer any FOUR of the following : **(4×10= 40 Marks)**

13. Write a note on:
    (a) Aggregator model
    (b) Brokerage model
14. Explain in detail the E-business risk management issues?
15. (a) Explain the architecture of E-SCM.
    (b) Describe the old and new way of managing supply and information flow.
16. (a) Asian Paints is E-transforming the organization.Justify
    (b) What are the areas where E-commerce is witnessing a rapid growth in the global markets? Explain.
17. Write a note on:
    (a) Internet Gambling
    (b) Threats to children