B. C. A. (Sem. III) (CBCS) Examination

October - 2019

BCA EC - 203 : Operating System & Concept

Time : **3** Hours] [Total Marks : **70**

Instructions : (1) Figures on the right indicate the marks.

(2) All Questions are compulsory.

(3) Answer of each question must start on a new page.

(4) Answer of all sub-questions of a question should be written in continuous order.

1 Explain Any **Two** : 14

(a) What is Operating System? Explain functions of Operating System in detail.

(b) What is process scheduling? Explain Round Robin Scheduling in detail with example.

(c) Explain Semaphore in detail with example.

2 Explain Any **Two** : 14

(a) Explain the use of Banker's Algorithm for multiple resources for Deadlock Avoidance with illustration.

(b) Define a process. Explain the process state transition with a neat diagram.

(c) Explain SSTF and LOOK disk scheduling algorithms.

3 Explain Any **Two** : 14

(a) Explain swapping and fragmentation in detail.

(b) Write Various Deadlock Prevention Techniques.

(c) (1) Explain concept of Demand Paging in Memory Management.

(2) Explain contiguous and non-contiguous allocation.

4 Do as Directed : (Any **14**) **14**

    (1) FCFS stands for _____

    (2) RAID stands for _____

    (3) Define the term: Best fit.

    (4) _____ technique used for overcoming external fragmentation.

    (5) The operating system is software for a computer system that treats as an interface between the user and _____

    (6) Briefly explain: Multitasking.

    (7) Briefly explain: Mutual Exclusion.

    (8) Define term: Real time operating System.

    (9) Define term: Monitor.

    (10) What is Race Condition?

    (11) The number of processes completed per unit time is know as _____.

    (12) In Segmentation, each address is specified by _____ and _____.

    (13) Semaphore is a/an integer variable to solve the critical section problem. (True/False)

    (14) Every address generated by the CPU is divided into two parts _____ and _____.

    (15) Round robin scheduling fails under _____ scheduling

    (16) Define term: Short term Scheduler.

5 Answer the following : (Any **Two**) **14**

    (a) Explain Contiguous and Linked File Allocation Methods

    (b) Explain in detail: Page Replacement Algorithm.

    (c) (1) Explain Multiprogramming with Variable Partitions. **4**

        (2) List and Explain different File Attributes. **3**

_____

HA-073002 Seat No. _____

B. C. A. (Sem. III) Examination

October - 2019

BCA CC - 202 : Object Oriented Concepts & Programming

Time : **3** Hours] [Total Marks : **70**

Instructions

1) Figures on the right indicate the marks.
2) All Questions are compulsory.
3) Answer of each question must start on a new page.
4) Answer of all sub-questions of a question should be written in continuous order.

1 Explain Any **Four.** **20**
   (a) Explain inline function with suitable example.
   (b) Write a short note on data types available in C++
   (c) What do you mean by exception handling? Explain catch(...) with suitable example.
   (d) Explain with example: static variable, static function and static class.
   (e) Explain difference between structure and classes in C++.

2 Explain Any **Four.** **20**
   (a) Explain call by reference function with suitable example.
   (b) What is Base and Derived Class? Explain it with suitable example.
   (c) Explain Pointer with suitable example.
   (d) Write a program to overload unary minus operator.
   (e) Explain this pointer with suitable example

3 Explain Any **Four.** **20**
   (a) Explain Virtual base class with suitable example.
   (b) How inheritance support OOPS? Explain different types of inheritance with an example.
   (c) Explain friend function with suitable example
   (d) Discuss overloading of the >>, << and == operators using suitable examples.
   (e) How is constructor useful? Explain copy constructor in detail with a suitable example.

4 **Do as Directed (Any Ten):** **10**
   (1) Define the term: Destructor.
   (2) Define the term: Data Hiding

(3)   Define the term: Encapsulation.
(4)   Define the term: Virtual Destructor.
(5)   Define the term: Function Overloading
(6)   Define the term: Function Overriding
(7)   Define the term: Polymorphism
(8)   Define the term: Abstract Class.
(9)   Define the term: Late Biding.
(10) Define the term: Class.
(11) Define the term: Object.
(12) What is the use of <iostream.h>

————————

HC-073004 Seat No._____

B. C. A. (Sem. III) Examination

October - 2019

BCA CC - 204 : Basics of Networking

Time : **3** Hours] [Total Marks : **70**

Instructions : (1) Figures on the right indicate the marks.

(2) All Questions are compulsory.

(3) Answer of each question must start on a new page.

(4) Answer of all sub-questions of a question should be written in continuous order.

1 Answer the following : (Any **14**) 14

(1) Explain the term: Bandwidth.

(2) What is a noise?

(3) Write one disadvantage of layering mechanism.

(4) Define the term : Baud Rate.

(5) Define the term : Networking.

(6) Define the term : Point to Point network.

(7) Write one advantage of home networks.

(8) What is the job of routing algorithm?

(9) What is a delayed duplicate?

(10) What is Jitter?

(11) Briefly explain the term: Repeater.

(12) What are two important function of network layer?

(13) Define the term: Broadcasting.

(14) Define the term: Line of Sight.

(15) The bridge operates at which layer?

(16) What is collision avoidance?

2 Answer the following : (Any **Two**) 14

(1) Define the term : (a) Half Duplex (b) Simplex (c) Full Duplex (d) Protocol (e) Syntax (f) Semantics (g) Analog Signal.

(2) Differentiate between LAN, MAN and PAN with diagram.

(3) Explain Message Switching Techniques. Also explain how it differs from Circuit Switching.

3 Answer the following : (Any **Two**) 14

(1) What is the importance of network topology? Explain Star, Mesh and Bus Topology with diagram.

(2) Explain functionality, working and diagram of twisted pair cable.

(3) Explain Satellite Communication Unguided media with diagram.

4 Answer the following : (Any **Two**) 14

(1) Explain TCP/IP model in detail with functionality of each layer.

(2) Explain UDP, FTP, HTTP protocol with suitable example.

(3) Explain Parallel and Serial Transmission mode with its functionality and diagram.

5 Answer the following : (Any **Two**) : 14

(1) Explain Multiplexing with suitable example, diagram and functionality.

(2) Explain Infrared Communication with diagram and suitable example.

(3) Explain Switch in detail. How it is differ from Hub? Explain it.

_____

B. C. A. (Sem. III) Examination

October - 2019

BCA CC-201 : Database Management System

Time : **3 Hours**]   [Total Marks : **70**

Instructions : (1) Figures on the right indicates the marks.

(2) All questions are compulsory.

(3) Answer of each question must start on a new page.

(4) Answer of all sub-questions of a question should be written in continuous order.

1   Defined the following : (Any **14**)   **14**

(1)   What is data dictionary?

(2)   Define the term: NULL constraint.

(3)   DML stands for _____.

(4)   DCL stands for _____.

(5)   Define the term: Candidate Key.

(6)   What is the functionality of COUNT() function with syntax?

(7)   Use of COMMIT statement.

(8)   Define the term: GRANT

(9)   Explain the string function: REPLACE().

(10) Explain the string function: LTRIM().

(11) Full form of SQL is _____.

(12) Define the term: Query Optimization.

(13) What does mean by Decision Support System?

(14) Use of INTERSECT with syntax.

(15) What is Data Mining?

2   Explain any **two** :   **14**

(a)   What is the use of ALTER and UPDATE? Explain with suitable example.

(b) Create the table with given constraints, use appropriate data types : Product_Master (prod_id, prod_name, qty, sell_price)

→ prod_id is primary key

→ qty_must be >20

→ sell_price not null.

(1) Display the product names whose qty is between 200 and 300.

(2) Show the details of all the products in descending order of the sell price.

(3) Add 50 to the sell price of all the products.

(4) Remove the column prod_name from the table.

(5) Destroy the table along with its data.

(c) Explain the functionality of Primary key and Foreign key with syntax and suitable example.

3 Explain any **two** :   14

(a) What is DDBMS? Explain components of it with suitable example.

(b) Explain Two Phase Commit protocol with diagram and suitable example.

(c) Explain SPSD and MPSD.

4 Explain any **two** :   14

(a) Explain OLAP with suitable example.

(b) What is Business Intelligence? Explain architecture of it and briefly explain it.

(c) Explain view with syntax and suitable example.

5 Explain any **two** :   14

(a) What is the functionality of UNION and UNION ALL? Explain syntax of it with suitable example.

(b) Explain Inner, Outer, Left and Right Joins with suitable example.

(c) Explain the following function with syntax and example :

(1) LEN(),   (2) CONCAT(),   (3) SUBSTRING()

HE-073006   Seat No._____

B. C. A. (Sem. III) Examination

October - 2019

BCA EC - 201 : Disaster Management

Time : **3** Hours]   [Total Marks : **70**

Instructions : (1) Figures on the right indicate the marks.

(2) All Questions are compulsory.

(3) Answer of each question must start on a new page.

(4) Answer of all sub-questions of a question should be written in continuous order.

1   Explain Any **Two** :   **14**

   (a)   Giving suitable example discuss the role of an Engineer in case of any natural disaster.

   (b)   Name the technological disasters. Discuss any one such disaster.

   (c)   Explain the various hazards affecting the environment.

2   Explain Any **Two** :   **14**

   (a)   Write a short note on Disaster Management.

   (b)   Explain various causes of earthquake.

   (c)   Differentiate between endogenous hazards and exogenous hazards.

3   Explain Any **Two** :   **12**

   (a)   Explain the term: Environmental Stress.

   (b)   Discuss important guiding principles of rehabilitation and reconstruction.

   (c)   (1)   Write a note on Disaster Management Cycle.   **3**

       (2)   Discuss the process of risk assessment.   **3**

4   Do as Directed : (Any **Five**)   10

    (1)   Discuss Man made disaster with suitable example.

    (2)   List out the various causes of environmental hazards.

    (3)   Explain the flood hazard status India.

    (4)   What are the various methods of mitigation of earthquakes?

    (5)   Write down the different forms of natural disasters.

    (6)   Differentiate between disaster management and disaster assessment.

    (7)   How climate change can affect disaster?

5   Answer the following : (Any **Two**)   20

    (a)   Explain various disaster management schemes offered by government of India.

    (b)   Write the role played by Armed forces, NDRF police and civil defence to prevent manmade disasters.

    (c)   Describe the application of Remote Sensing and GIS for the Disaster Management.

_____

HD-073005   Seat No. _____

B.C.A. (Sem. III) Examination

October – 2019

BCA CC-205 : Statistical Computing

Time : **3** Hours]   [Total Marks : **70**

Instructions : (1) Figures on the right indicate the marks.

(2) All Questions are compulsory.

(3) Answer of each question must start on a new page.

(4) Answer of all sub-questions of a question should be written in continuous order.

1 (a) Do as directed : (any Seven)   **7**

(1) What is concurrent deviation method?

(2) List the types of correlation.

(3) What does it mean by linear correlation ?

(4) Define regression analysis.

(5) What is the basic formula of calculating probability ?

(6) What do you mean by ground frequency distribution of Mode.

(7) Define range.

(8) What is mean Deviation?

(b) Explain the following terms : (Any Seven)   **7**

(1) Equally likely events.

(2) Sample space.

(3) Dependent Events

(4) Classical approach to probability.

(5) Weighted arithmetic mean.

(6) Individual frequency distribution.

(7) What is the probability of getting tail in one toss of a coin?

(8) List the methods of measuring correlation.

2 Answer the following : (Any Two) **14**

(1) State regression co-efficient and its properties.

(2) Find mean, median and mode for the following.

   (a) 19, 12, 9, 5, 8, 5, 25, 8, 15, 12

   (b) 99, 77, 55, 33, 11, 22, 44, 66, 88

   (c) All the odd terms between 21 and 35.

(3) A pack contains 4 blue, 2 red and 3 black pens. If a pen is drawn at random from the pack, replaced and the process is repeated 2 more times then what is the probability of drawing 2 blue and 1 black pen?

3 Answer the following : (Any Two) **14**

(1) Calculate the standard deviation for the following sample data using all methods: 1, 8, 27, 64, 125, 216, 343, 512.

(2) The number of vehicles sold by a showroom in a day was recorded as follows.

Day	Frequency
1	20
2	15
3	18
4	5
5	10
6	17
7	21
8	19
9	25
10	28

Calculate the quartile deviation and coefficient of quartile deviatio for the given discrete distribution.

(3) Calculate the coefficient of standard deviation and coefficient of variation from the following distribution.

Days	$1-5$	$5-10$	$10-15$	$15-20$
No. of Patients	10	20	18	15

4 Answer the following : (Any two)   **14**

  (1) (a) What is the probability of the occurrence of the   **3** number that is odd or less than 5 when a fair dice is rolled ?

        (b) A single coin is tossed 5 times. What is the   **4** probability of getting at least one head ?

  (2) For the data given below :

X	15	5	8	23	21	19	4	9
Y	9	2	5	19	17	12	2	6

      1. Compute r and r^2.

  (3) Calculate the Karl Pearson's Correlation for the following data :

X	50	65	35	70	59	65	49	88	62	67
Y	60	61	43	69	64	56	57	77	65	60

5 Answer the following :   **14**

1.

X	95	85	80	70	60	65	75	90
Y	85	95	70	65	70	75	80	60

Calculate regression line of X on Y.

2.

Height of fathers	65	63	67	64	68	62	70	66	68
Height of sons	68	66	68	65	69	66	68	65	71

Find the regression line of height of sons on height of fathers. Also determine the height of son where father's height is 62.

———————