P.G. DIPLOMA DEGREE EXAMINATION, DECEMBER – 2018

INFORMATION TECHNOLOGY

Basics of IT

Time : 3 Hours   Maximum Marks :70

Answer any five questions.
All questions carry equal marks.

Q1) Discuss the relationships among business pressures, organizational responses, and information systems.

Q2) Describe the components of computer-based information systems and its evaluation.

Q3) Write about various output devices with neat sketches.

Q4) State and discuss classification of storage hierarchy.

Q5) What is an operating system? Describe the general functions of the operating system.

Q6) Write about personal application software's and their features with example.

Q7) a) Explain how a database approach overcomes the problems associated with the traditional file environment.
     b) Describe the three most common data models

Q8) Describe the eight basic types of communications media, including their advantages and disadvantages.

Q9) Explain about client/server computing and peer-to-peer computing with example.

Q10) Discuss about evaluation of internet and how the internet is working.

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P.G. DIPLOMA DEGREE EXAMINATION, DECEMBER – 2018
INFORMATION TECHNOLOGY

Data Structure with C

Time : 3 Hours   Maximum Marks :70

Answer any five questions.
All questions carry equal marks.

Q1) Explain about different data structure operations and also explain abstract data type.

Q2) Discuss about sequential, selection and iterative logic for implementing the algorithm.

Q3) Write about various string operations with suitable examples.

Q4) Illustrate pattern matching algorithm with example.

Q5) How to represent linked list in memory? Discuss about traversing and searching operation on lined lists.

Q6) Write a program to implement circular queue using array. Perform following operations in a circular queue of length 4 and give the Front, Rear and Size of the queue after each operation.
   a)   Insert A, B
   b)   Insert C
   c)   Delete
   d)   Insert D
   e)   Insert E
   f)   Insert F
   g)   Delete

Q7) Explain about threaded binary trees and binary search trees with example.

Q8) What is AVL tree? Write a subroutine to insertion and deletion operations in AVL trees.

Q9) What is hashing? What are the qualities of a good hash function? Explain any two hash functions in detail.

Q10) Explain the trace of insertion sort and merge sort on following data.

42, 23, 74, 11,65, 58, 94, 36, 99, 87

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P.G. DIPLOMA DEGREE EXAMINATION, DECEMBER – 2018
INFORMATION TECHNOLOGY

Database Management Systems

Time : 3 Hours   Maximum Marks :70

Answer any five questions.
All questions carry equal marks.

Q1) Write about various components of database management systems and advantages of database systems.

Q2) Explain about the following associations between files with example:
- a) One - to - one association
- b) One - to - many associations
- c) Many - to - many
- d) Multiple associations
- e) One - to - one conditional
- f) Recursive associations

Q3) Explain about queue, sorting list, inverted list and tree data structures.

Q4) Briefly explain about different types physical data models.

Q5) What are the various steps in database design? Explain in detail.

Q6) Describe the guideline for mapping conceptual data model into relational and hierarchical data models.

Q7) Explain about PC - FOCUS database description with college database.

Q8) Discuss about integrated database management system(IDMS).

Q9) Write about various interactive SQL DML commands with syntax.

Q10) Explain database recovery mechanism in detail.

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P.G. DIPLOMA DEGREE EXAMINATION, DECEMBER – 2018
INFORMATION TECHNOLOGY
Computer Networks

Time : 3 Hours　　　　　　　　　　　　　　　　Maximum Marks :70

Answer any five questions.
All questions carry equal marks.

Q1) Discuss about various network topologies with neat sketches.

Q2) What do you mean by guided transmission media? Explain various guided media used for data transmission.

Q3) During the communication, how various layers of OSI model exchange information to establish connection? Describe with the help of a suitable example.

Q4) What type of errors can be detected by parity check code? How is it implemented? Explain with suitable example.

Q5) Explain link state routing algorithm in detail.

Q6) Explain in detailed about Multiplexing and De-multiplexing works.

Q7) Discuss the working principle of TCP.

Q8) Compare and contrast stop and wait and sliding window protocol in detail with an illustration.

Q9) What is IP address? What are elements of IP address? How to calculate IP address?

Q10) Explain in detail about the DES cryptographic algorithm with its limitations.

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P.G. DIPLOMA DEGREE EXAMINATION, DECEMBER – 2018
INFORMATION TECHNOLOGY
Computer Organisation

Time : 3 Hours   Maximum Marks :70

Answer any five questions.
All questions carry equal marks.

Q1) Explain about embedded and ARM evaluation.

Q2) Discuss different computer components with respect to Top-Level View with neat architecture.

Q3) Explain about bus structure and bus configurations with diagrams.

Q4) a) What general categories of functions are specified by computer instructions?
b) Describe different types of transfers of computer's interconnection structure support.

Q5) Discuss working mechanism of optical memory devices and give its advantages.

Q6) Explain common characteristics are shared by all RAID levels.

Q7) Explain about hardware Implementation of Unsigned Binary Multiplication with flow chart and example.

Q8) Explain about floating point addition and subtraction with suitable example.

Q9) Explain about microprocessor register organization.

Q10) Explain how branch instructions can be handled in the pipeline processors.

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P.G. DIPLOMA DEGREE EXAMINATION, DECEMBER – 2018

INFORMATION TECHNOLOGY

Operating Systems

Time : 3 Hours   Maximum Marks :70

__Answer any five questions.__
__All questions carry equal marks.__

Q1) Describe an essential features of the following types of operation system:

 a) Time sharing systems

 b) Distributed systems

 c) Multi-programming systems.

Q2) a) What is scheduler? Describe different types of schedulers.

 b) Explain the terms context switching and spooling.

Q3) Assume that the following proceses arrive at time 0, in the order given, with the length of the CPU-burst time given in milliseconds;

 Job: A   B   C   D   E

 Burst Time: 10   29   3   7   12

 Give the Gantt chart illustrating the execution of processes using FCFS, Round Robin (quantum = 10) and SJF scheduling. Calculate the average waiting time for each of the above algorithm.

Q4) Explain in detail about the threading issues.

Q5) Write about critical regions and monitors.

Q6) Describe paging in detail with the neat block diagram.

Q7) What is meant by Virtual memory. Describe the advantages of virtual memory.

Q8) What is a directory? Describe the most common schemes for defining the logical structure of a directory.

Q9) Explain the concept of Contiguous allocation method of disk block with a neat diagram in detail.

Q10) How to handle worms and viruses by the operating systems? Explain in detailed.

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