Code: AC08 / AT08   Subject: SYSTEM SOFTW...

Time: 3 Hours   Max. Marks: ...

DECEMBER 2010

NOTE: There are 9 Questions in all.

- **Question 1 is compulsory and carries 20 marks. Answer to Q.1 must be written in the space provided for it in the answer book supplied and nowhere else.**
- **The answer sheet for the Q.1 will be collected by the invigilator after half an hour of the commencement of the examination.**
- **Out of the remaining EIGHT Questions answer any FIVE Questions. Each question carries 16 marks.**
- **Any required data not explicitly given, may be suitably assumed and stated.**

Q.1 **Choose the correct or the best alternative in the following:**   (2×10)

a. Unix is a

 (A) Application software   **(B)** System software
 (C) Hardware   **(D)** None of above

b. The function of synthesis phase is

 (A) Determine memory requirements
 (B) Determine meaning of source language.
 (C) Get address from symbol table
 (D) All the above.

c. It is not a feature of high level language

 (A) Machine dependent   **(B)** Machine independent
 (C) Portability   **(D)** Own featured Architecture

d. Which is / are the major advantages of the distributed system.

 (A) Resource sharing   **(B)** Reliability
 (C) Computational speed up   **(D)** All the above

e. Graphical representation of a problem is called

 (A) Algorithms   **(B)** Flow chart
 (C) Programming   **(D)** None of above

f. Operating system perform the interface between

 (A) User and software   **(B)** Software and hardware
 (C) User and hardware   **(D)** None of above

g. Round-robin scheduling provides…. to each program

 (A) equal time slice   **(B)** different time slice
 (C) Shortest job first   **(D)** None of above

h. Demand paging is a part of

 (A) File management   **(B)** Memory management
 (C) Device management   **(D)** None of above

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i. Overloading is a concept of

   (A) Conventional programming   **(B)** OOPs
   (C) System programming   **(D)** All of above

j. Mnemonics STOP is used for

   (A) Stop the execution   **(B)** End of program
   (C) Error code   **(D)** None of above

Answer any FIVE Questions out of EIGHT Questions.
Each question carries 16 marks.

Q.2 a. Describe the system software and application software on following points **(8)**
    (i) Machine dependency
    (ii) Name of system software and application software
    (iii) Uses.

    b. Describe the pass structure of an assembler. Also compare single-pass and
    two-pass assembler. **(8)**

Q.3 a. Explain the following in detail:- **(8)**
    (i) Mnemonic opcode
    (ii) Symbolic operation code
    (iii) Forward reference
    (iv) Declaration of data / storage area

    b. Explain linkage editor and its design **(8)**

Q.4 a. What are the main functions performed by a loader? Explain each in brief. **(8)**

    b. What do you mean by dynamic linking? What are its various types? Write
    few advantages of dynamic linking. **(8)**

Q.5 a. What is a parameter? Explain in brief – keyword parameters and positional
    parameters. How do two categories differ? **(8)**

    b. What is the need of storage management? Explain various types of storage
    schemes. **(8)**

Q.6 a. Write the significance of lexical analysis, syntax analysis and semantic
    analysis. **(8)**

    b. Explain the tools of compiler construction. **(8)**

Q.7 a. What is Context Free Grammer (CFG)? How it is different from regular
    expression notation. **(8)**

    b. Describe macros in detail. Explain macro expansion process in brief. Also
    explain two key notations used during macro expansion. **(8)**

Q.8 a. What is an operating system? Write basic functions of an operating system. **(8)**

b. Explain how interrupts are handled by an operating system. **(8)**

Q.9 Write short notes on **(8×2)**

    (i) Text editor
    (ii) Data Base Management System
    (iii) Principles of object oriented programming
    (iv) Interactive Debugging System