Total No. of Questions : 12]

SEAT No. :

P2829

[Total No. of Pages : 2

[4958]-147
T.E.(E&TC)
SYSTEM PROGRAMMING AND OPERATING SYSTEM
(2008 Course)(Semester-II)(304188)

Time :4Hours] *[Max. Marks : 100*

Instructions to the candidates:

1) ***Answers to the two sections should be written in separate answer-books.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Assume suitable data if necessary.***

SECTION-I

Q1) a) What do you understand by Grammar? Explain the use of terminal & non-terminal in representing grammar. **[4]**

b) Explain language processing activities. **[4]**

c) Explain LEX & YACC. **[8]**

OR

Q2) a) Define following terms & explain where it is used with examples. **[8]**

i) DFA ii) Regular Expression

iii) Forward Reference iv) Back Tracking

b) Write the algorithm for a PASS II of a assembler. **[8]**

Q3) a) Explain the processing of LTORG, ORIGIN statements by PASS I and PASS II of a two pass assembler. **[8]**

b) Define macro & explain macro expansion with suitable example of nested macro. **[8]**

OR

Q4) a) Explain the need of lexical analyzer with suitable example and explain how it works. **[8]**

b) Explain Data structures of macro preprocessor. **[8]**

P.T.O.

Q5) a) What is a loader? Enlist the basic functions of a loader. **[8]**

b) Explain the function of compiler and go scheme. What are the advantages and disadvantages of the scheme. **[10]**

OR

Q6) a) Explain the design of a direct linking loader. Also explain all required data structures. **[9]**

b) Explain the design of an absolute loader. **[9]**

SECTION-II

Q7) a) What is Operating system? Explain hard real time system and soft real time system. **[8]**

b) Explain inter process communication. Explain any two IPC problems. **[8]**

OR

Q8) a) Explain deadlocks? Describe various methods for dead lock prevention. **[8]**

b) Explain Round Robin scheduling algorithm with example **[8]**

Q9) a) Compare Paging and Segmentation. **[8]**

b) What is page fault? How operating system handles page fault. **[8]**

OR

Q10) a) Mention different page replacement algorithms. Explain any one with example. **[8]**

b) Write short note on **[8]**

i) Fragmentation ii) Swapping

Q11) a) Explain Input/Output software layers. **[9]**

b) Draw and briefly explain file structure. **[9]**

OR

Q12) Write short Note on(any three): **[18]**

a) Graphical User Interface

b) Clock Software

c) Directory Structure

d) Disk space Management