BTS-V(S)-11.20-0626   Reg. No. ☐☐☐☐☐☐☐☐

B

B.Tech. Degree V Semester Supplementary Examination November 2020

CS 15-1502 SYSTEM PROGRAMMING
(2015 Scheme)
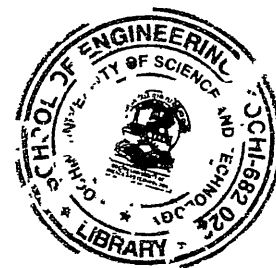
Time. 3 Hours   Maximum Marks: 60

PART A
(Answer *ALL* questions)

(10 × 2 = 20)

I. (a) Explain and show usage by giving examples of following assembler directives·
         ORIGIN, EQU, LTORG, START.
    (b) Explain the Header, Text and End records
    (c) Write the advantages of two pass assembler over one pass assembler.
    (d) What are the limitations of the absolute loader?
    (e) What are the disadvantages of compile-and-go loaders?
    (f) Explain boot strap loaders.
    (g) Show how the macro processors allow the generation of unique labels.
    (h) State the difference between a macro and a subroutine.
    (i) Discuss the different types of operating systems.
    (j) What are virtual machines and its advantages.

PART B

(4 × 10 = 40)

II. (a) Explain program relocation with modification records.   (5)
     (b) Explain the role of Mnemonic Opcode Table, Symbol Table, Literal Table   (5)
          and POOL Table in assembling process of assembly language program.
                                    OR
III.   Explain the two-pass assembler in detail with algorithm and data structures.   (10)

IV.   With a detailed algorithm explain the loading operation performed by a 2   (10)
          pass linking loader.
                                    OR
V.   (a) Explain in detail about various loading schemes.   (5)
          (i)   Linking loader
          (ii) Linkage editor
     (b) List advantages and disadvantages of binding at load time over binding at   (5)
          assembly time

VI. (a) Explain the concept of recursive macro expansion with an example.   (5)
     (b) Write a short note on Conditional macro expansions.   (5)
                                    OR
VII.   What is Macro? Why do we use macro? Explain the macro expansion with   (10)
          algorithm and data structures.

VIII.   Explain.   (10)
          (i)   Multiprocessor operating system
          (ii) Network operating system
                                    OR
IX.   Write a short note on run time environment and user interface.   (10)

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