

2022

BCA 3rd Semester Examination

System Programming

PAPER — 2102

Full Marks : 100

Time : 3 hours

The figures in the right-hand margin indicate marks.

*Candidates are required to give their answers
in their own words as far as practicable.*

Illustrate the answers wherever necessary.

Answer Q. No. **1** and *any* **four** from the rest.

1. Answer *any* **five** questions : $2 \times 5 = 10$

✓(a) What is system program? How does it differ from application program?

✓(b) What is pre-processor? How does it differ from microprocessor?

(2)

- ✓ (e) What is cross-compiler?
 - ✓ (d) Distinguish between macro and subroutine.
 - (e) What is interpreter?
 - (f) What do you mean by forward references?
 - ✓ (g) Differentiate between compiler and assembler.
2. ✓ (a) What will happen when you perform static linking with share libraries?
- (b) Explain the working principle of 'dynamic binding'.
- (c) What is recursive macro?
- (d) Explain the drawbacks of absolute loader.
- $3+7+2+3=15$
3. (a) What is assembler?
- (b) Briefly explain the task of pass 1 and pass 2 of a two-pass assembler.
- (c) Explain the role of the following databases of a two-pass assembler :
- (i) Machine Op Table (MOT);
 - (ii) Symbol Table (ST) and Literal Table (LT)
 - (iii) Pseudo Op Table (POT). $2+4+(3 \times 3)=15$

(3)

4. (a) What is linking? How does it differ from loading?

(b) Give an example to explain linking of external references.

(c) What is the function of a two-pass direct linking loader? $(2+3)+5+5=15$

✓ 5. (a) What is the difference between directive and indirective statements?

(b) Distinguish between MAR and MBR with a diagrammatic representation.

(c) What are the advantages of using base register and index register in addressing modes?

(d) What is an overlay structure? What is its use? $3+3+4+5=15$

✓ 6. (a) Explain the various phases of compiler with a diagram.

(b) Write an assembly language program to multiply two numbers using macro. (The multiplication operation is performed within macro and values are supplied as arguments) $8+7=15$

(4)

✓ 7. Write short notes on the following (*any three*) :
5×3=15

- (a) Compiler and go loader
- (b) Macro call within macro
- ✓ (c) Dynamic linking
- ✓ (d) Text editor
- ✓ (e) Lexical analyser

[**Internal Assessment : 30**]

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