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M.Tech. (Sem. – 1st)

ADVANCED PROGRAMMING LANGUAGES

SUBJECT CODE : CS - 509

Paper ID : [E0689]

Time : 03 Hours Maximum Marks : 100

Instruction to Candidates:

1) Attempt any **Five** questions.
2) **All** questions carry equal marks.

Q1) (a) Define binding and binding time. Explain all the different classes of binding times.

(b) What do you mean by semantic analysis? Explain in detail.

Q2) (a) In hash-coding methods for set storage, both the rehashing and sequential scan techniques for handling collisions encounter difficulties if deletions from the set are allowed. Explain the difficulties encountered.

(b) What do you mean by block structure? Explain in detail.

Q3) (a) What is data object? Explain the importance of static scope rules in a programming environment.

(b) What do you mean by abstract data type? Explain.

Q4) (a) What is explicit sequence control? Explain in detail with an example.

(b) What do you mean by tree representation? Explain its types. Also give the tree representation of the following, assuming C precedence:

A–B+C/D*E*F+G.

Q5) (a) Explain the organization of typical hardware computer.

(b) What do you mean by virtual computer? Explain.

Q6) Write a note on the following:

(a) Heap storage management.

(b) Interactive environment.

Q7) (a) List and explain the disadvantage of using dynamic type checking.

(b) Explain the difference among the type, variables of that type and constant of that type.

Q8) (a) What are scheduled subprograms? Explain various subprogram scheduling techniques.

(b) What are recursive subprograms? How recursive subprograms are implemented? Explain.