

Roll No.

Total No. of Questions : 08]

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M.Tech.(Sem. - 1st)
ADVANCED PROGRAMMING LANGUAGES
SUBJECT CODE : CS - 509
Paper ID : [E0689]

[Note : Please fill subject code and paper ID on OMR]

Time : 03 Hours

Maximum Marks : 100

Instruction to Candidates:

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

- Q1)** (a) What are the major characteristics of a programming language? Compare the characteristics of any three popular programming languages.
- (b) Define and differentiate between translator and simulator computers.
- Q2)** (a) What are the different elementary data types available in any programming language? Take the example of C or C ++ to make your point.
- (b) How type checking is performed and how different programming languages handle type conversion to avoid any type of misrepresentation of data.
- Q3)** (a) Facilitating different types of Data structure is of major importance in a programming language. Compare the ease of availability and creation of different data types in different programming languages.
- (b) Differentiate between fixed size and variable sized data structures. Discuss their advantages and disadvantages and also their application areas.
- Q4)** (a) What you understand by programmer defined data types. How these have changed the way programming is done. Discuss abstraction and polymorphism in this context.
- (b) How co-routines are different from procedures /functions. Explain with the help of an example.

- Q5)** (a) Different data declarations may have different scope in which that data is visible. Differentiate between static and dynamic scope. Also differentiate between local and global scope of data variables.
- (b) List the major runtime elements requiring storage. Discuss the merits and demerits of programmer controlled and system controlled storage management.
- Q6)** (a) Write detail note on stack based and heap based storage management.
- (b) Make a list of syntactic elements of a language. How syntax errors are found?
- Q7)** (a) What are different types of operating and programming environment? Give an example of batch processing environment and interactive environment.
- (b) How we determine the semantic correctness of programming code. Discuss different techniques used for this.
- Q8)** Write note on the following:
- (a) Recursion.
- (b) Explicit sequence control.
- (c) Enumerated data types.
- (d) Virtual computers.

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