## Sixth Semester B.Tech. Degree Examination, May 2016
### (2008 Scheme)
### 08.602 PRINCIPLES OF PROGRAMMING LANGUAGES (R)

Time : 3 Hours

Max. Marks : 100

## PART – A

Answer **all** questions :

(10×4=40 Marks)

1. Define the terms 'scope' and 'binding'. How is a declaration different from a definition ?

2. Is it possible to have a hybrid approach to language implementation ? Explain.

3. Distinguish between structured and unstructured control flow mechanisms.

4. What is the difference between static and dynamic linking ?

5. What do you mean by Lazy evaluation ? Give an example.

6. Explain short circuit evaluation with respect to Boolean expressions.

7. What are the benefits of side effect freedom in programming ?

8. List some significant characteristics of scripting languages.

9. What is the use of virtual machine concept ?

10. What do you understand by the term 'Late binding of machine code' ?

## PART – B

Answer **any one full** question from **each** Module :

### Module – I

11. Describe different strategies for storage allocation and garbage collection.     **20**

OR

12. Critically examine the scope rules and binding of referencing environments, with reference to a programming language you are familiar with.     **20**

## Module – II

13. i) Explain the control strategy is prolog.                                                    12

    ii) Explain with examples :

       a) generic subroutine          b) coroutine                                        8

                                      OR

14. i) Explain the fundamental concepts of Lambda calculus.                         12

    ii) What are 'streams' and 'monads' ? Explain.                                         8

## Module – III

15. i) Explain the differences between a coroutine, a thread, a light weight process and
       a heavy weight process.                                                                  12

    ii) What is busy waiting ? What is its major alternative ?                          8

                                      OR

16. i) With examples, describe how pattern manipulation is implemented in a typical
       scripting language.                                                                        8

    ii) Explain the language support/constructs needed for thread implementation.   12

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