[16–HRGPKAC–D6S]

Form No. Ex–8

Sl. No. .....

Particulars about the candidate and the subject are **checked thoroughly** and corrected where necessary.

EXAM CENTRE CODE : .....

Invigilator

Signature of Officer in-Charge

BCA 6th Semester Examination, 2016

[System Programming] (BCA 19)

Time : 3 Hours

Full Marks : 80

Enrolment Number :

Medium of Answer :

INSTRUCTIONS TO CANDIDATES

1. This booklet contains 24 pages numbering 23. Please verify number of pages in the booklet before answering.
2. No pages of the script be torn out.
3. An examinee is allowed to bring only Admission Card and Identity Card to the Examination Hall. Any examinee found in possession of loose papers, books, mobile phones, etc., is liable to be expelled.
4. Enrolment Number and Medium of Answer must be written legibly at the specified places. Examinee's name and any other identifying mark which reveals examinee's identity shall not be written anywhere in the script.
5. For making calculations, etc., only the last page may be used.
6. Calculators will not be allowed for making calculations in the Examination Hall.
7. No candidate will be allowed to leave or go out of the Hall during the first hour of the Examination.
8. A candidate having completed his/her answer, the script must be handed over to an Invigilator before leaving the Hall.
9. Contravention of any of the instructions mentioned above shall render a candidate liable for disciplinary action as per regulations of the University.

229 (SP)

Mandatory

Examiner's Signature : _____

Examiner's Full Name : _____

Scrutiniser's Signature : _____

Scrutiniser's Full Name : _____

Question Nos.	Marks
1.	
2.	
3.(a)	
3.(b)	
3.(c)	
3.(d)	
3.(e)	
3.(f)	
4.(a)	
4.(b)	
4.(c)	
5.(a)	
5.(b)	
5.(c)	
Total	

Head Examiner's Signature : _____

/160

1×8=8

1. Answer the following questions :

   (a) What is a null string?

   (b) Give one example of imperative statement.

   (c) What are the kinds of assembly language statements?

   (d) What are the main elements of a grammar?

   (e) What will be the set of the regular expression (01)*?

   (f) Give one example of language processor.

   (g) What is semantic analysis?

   (h) Write two advantages of assembly language over machine language.

2. Answer the following questions : 2×8=16

(a) What is bootstrap loader?

(b) What is overlay?

(c) What is a formal language?

(d) What is a literal?

(e) What is postfix notation? Give one example.

(f) What do you mean by 'pass' of a language processor?

(g) Write one role of parser.

(h) What is dynamic linking?

3. Answer any *five* from the following questions : 4×5=20

(a) Define loading, relocating and linking.

(b) What do you mean by static and dynamic memory allocation?

(c) What is the function of interpreter? How is it different from a compiler?

(d) What are scanning and parsing? What do you mean by LR parsing?

(e) What is the purpose of symbol table?

(f) Define parse tree with a suitable example. When is a grammar said to be ambiguous?

4. Answer any *two* from the following questions : 8×2=16

(a) What is a finite-state automaton? Differentiate DFA and NFA with their characteristics. Give the regular expression for set of all strings over $\Sigma = \{a, b\}$ ending with *bb* and starting with *a*.

(b) Write short notes on :

(i) Assembly language statements

(ii) Regular expression

(c) Discuss the mechanism of absolute loader with their advantages and disadvantages.

5. Answer any *two* from the following questions : 10×2=20

(a) Discuss the mechanism of top-down and bottom-up parsing.

(b) Discuss the functions of both phases of an assembler during translating a source program to its processed form.

(c) Discuss the analysis and synthesis phases of a language processor.