GIET MAIN CAMPUS AUTONOMOUS GUNUPUR – 765022

B. Tech Degree Examinations, December – 2020

(Fifth Semester)

BCSPC5010 / BITPC5010 – Compiler Design

(CSE& IT)

Time: 2hrs   Maximum; 50 Marks

The figures in the right hand margin indicate marks.

PART – A: (Multiple Choice Questions)   (1 x 10= 10 Marks)

Q.1. Answer *ALL* questions   [CO#]   [PO#]

a. Which of the following groups is token together into semantic structures?   CO1   PO1
  (i) Syntax analyzer   (ii) Intermediate code generation
  (iii) Lexical analyzer   (iv) Semantic analyzer

b. What is the output of lexical analyzer?   CO1   PO1
  (i) A parse tree   (ii) A list of tokens
  (iii) Intermediate code   (iv) Machine code

c. Which is a process of finding a parse tree for a string of tokens?   CO2   PO1
  (i) Parsing   (ii) Analysing
  (iii) Recognizing   (iv) Tokenizing

d. What is the name of the process that determining whether a string of tokens can be generated by a grammar?   CO2   PO1
  (i) Analysing   (ii) Recognizing
  (iii) Translating   (iv) Parsing

e. Which of the following derivations does a top-down parser use while parsing an input string?   CO2   PO1
  (i) Leftmost derivation   (ii) Leftmost derivation in reverse
  (iii) Rightmost derivation   (iv) Rightmost derivation in reverse

f. The time interval between adjacent bits is called the _____   CO3   PO1
  (i) Word-time   (ii) Bit-time
  (iii) Turnaround time   (iv) Slice time

g. The average time required to reach a storage location in memory and obtain its contents is called _____   CO3   PO1
  (i) Latency time   (ii) Access time
  (iii) Turnaround time   (iv) Response time

h. The circuit converting binary data in to decimal is_____   CO3   PO1
  (i) Encoder   (ii) Multiplexer
  (iii) Decoder   (iv) Code converter

i. Which of the following is not a weighted code?   CO4   PO1
  (i) Decimal Number system   (ii) Excess 3-cod
  (iii) Binary number System   (iv) None of the mentioned

j. The circuit used to store one bit of data is known as_____   CO4   PO1
  (i) Register   (ii) Encoder
  (iii) Decoder   (iv) Flip Flop

PART – B: (Short Answer Questions)   **(2 x 5 = 10 Marks)**

Q.2. Answer *ALL* questions   [CO#]   [PO#]

  a. List the various phases of a compiler.   CO1   PO2

  d. Why lexical and syntax analyzers are separated out?   CO2   PO1

  e. List the properties of LR parser.   CO2   PO2

  f. Define backpatching.   CO3   PO2

  i. What are the properties of optimizing compiler?   CO4   PO1

PART – C: (Long Answer Questions)   **(6 x 5= 30 Marks)**

Answer *ANY FIVE* questions   Marks   [CO#]   [PO#]

  3. Explain the way of grouping the compiler phases.   (6)   CO1   PO2

  4. Construct the DFA with example.   (6)   CO1   PO2

  5. Explain LALR(1) parsing in detail.   (6)   CO2   PO3

  6. List the various application of syntax directed translation.   (6)   CO2   PO3

  7. Demonstrate the implementation of three-address statements.   (6)   CO3   PO4

  8. Explain the different methods of translating Boolean expressions.   (6)   CO3   PO4

  9. Interpret the register allocation and assignment in detail.   (6)   CO4   PO5

 10. Write the code generating for assignment statements d:= (a-b) + (a-c) + (a-c).   (6)   CO4   PO5

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