SHRI VISHWAKARMA SKILL UNIVERSITY, DUDHOLA, PALWAL

B. Tech. Computer Science & Engg. (AI/ML)- SECOND Semester

SECOND SESSIONAL TEST (SESSION: 2022-2023)

Subject Code: ETCS106 **Subject Name: Data Structure**

Sem.: Second **Time:** 60 minutes **Maximum Marks:** 20

SECTION A

Q 1. Very Short answers type (remembering, understanding) (5 questions are compulsory) $5 \times 1 = 5$

Sl.	Question Description	RBT Level	CO Mapped
Q1.1	Which of the following is not the operation defined on Stack: (a) PUSH (b) POP (c) INORDER (d) DISPLAY	Understanding	CO1
Q1.2	Which of the following operations accesses each record exactly once so that certain items may be processed? (a) Inserting (b) Deleting (c) Traversing (d) Searching	Understanding	CO1
Q1.3	The ---------- notation is used when the function $g(n)$ defines a lower bound for the function $f(n)$. (a) Omega (b) Big O (c) Theta (d) Little Oh	Understanding	CO3
Q1.4	Define POLISH (prefix) notations with example.	Remembering	CO2
Q1.5	Differentiate between Static and Dynamic memory Allocation	Remembering	CO1

SECTION B

Q2. Short answers type (understanding, applying) (2 questions are compulsory) $2\frac{1}{2} \times 2 = 5$

Sl.	Question Description	RBT Level	CO Mapped
Q2.1	Translate , by inspection and hand, each infix expression into its equivalent postfix expression: (a) (A - B) * (D / E) (b) (A + B) / (E - F) + G	Applying	CO2
Q2.2	Define QUEUE and also describe the various Operations performed on QUEUE.	Understanding	CO2

SECTION C

Q3. Long answers type (understanding, applying, analysing, evaluating) (2 questions are compulsory) $5 \times 2 = 10$

Sl.	Question Description	RBT Level	CO Mapped
Q3.1	Consider the linear arrays XXX(-10:10), YYY(1935:1985) (a) Find the number of elements in each array. (b) Suppose *Base* (YYY) = 400 and there are $w = 4$ words per memory cell for YYY. Find the address of YYY[1942], YYY[1977] and YYY[1988]	Evaluate	CO1
Q3.2	Consider the following stack of characters, where STACK is allocated N = 8 memory cells: STACK: A,C, D, F, K, ___, ___, ___, ('____' denotes the empty memory Cell). Describe the stack as the following operations take place: (a) POP (STACK, ITEM) (b) POP (STACK, ITEM) (c) PUSH(STACK, L) (d) PUSH(STACK, P) (e) POP(STACK, ITEM)	Applying	CO2

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