

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI(NEW) EXAMINATION – WINTER 2022****Subject Code:3160715****Date:17-12-2022****Subject Name:System Software****Time:02:30 PM TO 05:00 PM****Total Marks:70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

MARKS

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|------------|-----|---|-----------|
| Q.1 | (a) | Differentiate Compiler and Interpreter. | 03 |
| | (b) | Define following terms:
1)Linker 2)Loader 3) Parser 4)Assembler | 04 |
| | (c) | Explain phases of Compiler with suitable example. | 07 |
| Q.2 | (a) | What is a Symbol Table? | 03 |
| | (b) | Define following terms:
1)Semantic Gap
2)Execution Gap | 04 |
| | (c) | Find First and Follow Set from following grammar
S-> Aa bAc Bc bBa
A-> d
B-> d
Check grammar is LL(1) or not? | 07 |
| | | OR | |
| | (c) | Find First and Follow Set from following grammar
S-> AaAb BbBa
A-> €
B-> €
Check grammar is LL(1) or not? | 07 |
| Q.3 | (a) | What is a semantic expansion? | 03 |
| | (b) | List out advantages and disadvantages of macro. | 04 |
| | (c) | Draw a flowchart and explain a simple one pass macro processor. | 07 |
| | | OR | |
| Q.3 | (a) | What is a macro? | 03 |
| | (b) | Explain recursive macro with example. | 04 |
| | (c) | Explain design of macro preprocessor. | 07 |
| Q.4 | (a) | What is a macro preprocessor? | 03 |
| | (b) | Define following terms:
1)START 2)END 3)BYTE 4)WORD | 04 |
| | (c) | Explain the tasks performed by the PASS-1 and PASS-2 assembler? | 07 |
| | | OR | |
| Q.4 | (a) | What is backtracking? | 03 |
| | (b) | Define following terms:
1)OPTAB 2)SYMTAB 3)LITAB 4)POOLTAB | 04 |

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|------------|-----|---|-----------|
| | (c) | Explain forward reference with suitable examples .How to solve it using back -patching? | 07 |
| Q.5 | (a) | Explain types of grammar. | 03 |
| | (b) | Differentiate Absolute loader and Direct linking loader. | 04 |
| | (c) | Explain any three Code Optimization Techniques. | 07 |
| | | OR | |
| Q.5 | (a) | Explain Ambiguous grammar with any suitable example. | 03 |
| | (b) | List out advantages of Relocating loader. | 04 |
| | (c) | Write Quadruple,Triples and Indirect Triples for expression, $x = -a*b + -a*b$ | 07 |
