



# GOVERNMENT COLLEGE OF ENGINEERING, JALGAON

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Name of Examination : **Winter 2020** - (Preview)

Course Code & Course Name : **CO303 - System Programming**

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Maximum Marks : **60**

Duration : **3 Hrs**

[Edit](#) [Print](#) [View Answer Key](#) [Close](#) **Answer Key Submission Type:** Marking scheme with model answers and solutions of numerical

Instructions:

1. All questions are compulsory.
2. Illustrate your answer with suitable figures/sketches wherever necessary.
3. Assume suitable additional data; if required.
4. Use of logarithmic table, drawing instruments and non programmable calculators is allowed.
5. Figures to the right indicate full marks.

Solve any two

- 1) a) Differentiate direct and indirect addressing modes? Which addressing mode is useful in which type of situations? Take one practical example and justify which addressing mode is preferred and why? [5]  
 b) What are the assembler directives? Explain how assembler directives LTORG, ORIGIN and EDU are processed in first pass. [5]  
 c) Define macro processor and assembler and give example for each. How macros can be written in 'C' program. Give an example program. [5]
- 2) Solve any two  
 a) For the following piece of assembly code, show the contents of symbol table, literal table, pool table [5]

## Assembly Program:

Label Op-code operand LC value(Location counter)

JOHN START 200

MOVER R1,='3' 200

MOVEM R1, X 201

L1 MOVER R2,='2' 202

LTORG 203

X DS 1 204

END 205

- b) Give the various data structures in the design of pass -1 of two pass direct linking loader [5]  
 c) Explain the working of relocating loader. [5]
- 3) Solve any two  
 a) Explain conditional macro expansion, Macro instruction Defining Macros with example. [5]  
 b) Explain following features of Macro facility [5]  
 1. Macro instruction Arguments.  
 2. Macro calls within Macros
- c) Sort following numbers in ascending order by bucket sort: [5]  
 78,354,51,278,63,89,312,12
- 4)  
 a) Draw flowchart and explain working of absolute loader. [5]  
 b) Draw formats of MOT, POT, ST, BT database of pass-1 of assembler [5]
- 5) a) Discuss the design issues for function overloaded operators [5]  
 b) Explain in detail about various iterative statements and their design issues. [5]
- 6) a) What is system call? How it is handled by OS. [5]  
 b) Write short note on any one [5]  
 Device controller in OS  
 Interrupt handling by OS

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