



K. K. Wagh Institute of Engineering Education & Research, Nashik
(An Autonomous Institute From A. Y. 2022-23)

SUMMER-2024	
Exam Seat No.:	
Academic Year:2023-2024	Semester:IV
Class:SY	Program:B.Tech
Branch Code:COM	Pattern:2022
Name of Course:Computer Architecture	Course Code:COM222014
Max. Marks:60	Duration:2.30 Hrs.

Instructions: Candidates should read carefully the instructions printed on the Question Paper and on the cover page of the Answer Book, which is provided for their use.

1. This question paper contains 2 page(s).
2. Answer to each new question is to be started on a new page.
3. Assume suitable data wherever required, but justify it.
4. Draw the neat labelled diagrams, wherever necessary.
5. The last columns indicates the Course Outcome and level of Blooms Taxonomy of the Question/sub-question.

Question No. 1 Attempt following Question

- 1 Draw a diagram to represent 4-bit Arithmetic Circuit (6) CO1

Question No. 2 Attempt following Question

- 2 Draw and explain control unit of basic computer (6) CO2

Question No. 3 Attempt following Question

- 3.a) Explain assembly language and rules defined for it (6) CO3

OR

- 3.b) Demonstrate with program use of subroutines (6) CO3

- 3.c) With example explain Program loops (5) CO3

OR

- 3.d) Demonstrate with program how to input and output character (5) CO3

- 3.e) List and explain steps required for address sequencing (5) CO3

OR

- 3.f) With diagram explain computer hardware configuration. (5) CO3

Question No. 4 Attempt following Question

- 4.a) Draw a diagram to represent General Register Organisation (6) CO4

OR

4.b) Explain encoding of register selection field and ALU operation of Control word. (6) CO4

4.c) What is reverse polish notation? Represent stack operations to evaluate $4+5*8+6$ (5) CO4

OR

4.d) With two address instruction evaluate the expression : $Z=(A*B)+(C*D)$. (5) CO4

4.e) With diagram represent Pipeline for floating point addition and subtraction. (5) CO4

OR

4.f) Explain instruction Pipeline of four segment CPU (5) CO4

Question No. 5 Attempt following Question

5.a) Explain the connection between I/O bus and input output devices (6) CO5

OR

5.b) Explain following terms associated with Asynchronous data transfer (6) CO5

- i. Strobe
- ii. Handshaking
- iii. Timing diagram

5.c) Write a short note on Main memory. (5) CO5

OR

5.d) Draw block diagram of DMA controller and explain. (5) CO5

5.e) Illustrate memory hierarchy of computer system (5) CO5

OR

5.f) Explain in brief modes of transfer. (5) CO5

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