

RIB Workbook 2025

Computer Organization & Architecture

Answer Key

Chapter-1 : Data Representation

1. (b) 2. (a) 3. (c) 4. (b, d) 5. (c) 6. (a, c) 7. (a)
 8. (b) 9. (c) 10. (9) 11. (a, c) 12. (a, b, d) 13. (a, d) 14. (b)
 15. (d) 16. (b) 17. (a, d) 18. (-30) 19. (b) 20. (+56) 21. (-27)
 22. (0.35156) 23. (b) 24. (b) 25. (b) 26. (a, b, c, d)
- [48020000]

Chapter-2 : Machine Instructions, Addressing Modes and ALU Data Path

1. (c) 2. (c) 3. (d) 4. (30) 5. (3) 6. (a) 7. (64)
8. (c) 9. (b) 10. (d) 11. (b) 12. (b) 13. (70) 14. (a, b, d)
15. (34, 12, 23) 16. (1004) 17. (2^{15}) 18. (b, c, d) 19. (b, d) 20. (a, c, d) 21. (392)
22. (a, c, d)

Chapter-3 : Control Unit Design

1. (a, d) 2. (a, c, d) 3. (178) 4. (37.87) 5. (a, c, d) 6. (b) 7. (b)
8. (63) 9. (176) 10. (i) D, A, H, (ii) D, B, F, (iii) D, C, A, E, (iv) C, B, G 11. (104)
12. (a, b, c) 13. (29.77)

Chapter-4 : Instruction Pipeline

1. (9338) 2. (3.14) 3. (5.91) 4. (b) 5 stages 5. (c) 6. (2.83) 7. (2.85)
8. (a, c) 9. (6.16) 10. (a) 11. (c) 12. (8) 13. (25000) 14. (a)
15. (a, b, d) 16. (b, c) 17. (1.27) 18. (6) 19. (c) 20. (b, c, d)

Chapter-5 : Memory Organization

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|-----------------|---------|----------|-----------|----------------------------|-------------|-----------|
| 1. (a, b, d, e) | 2. (c) | 3. (b) | 4. (b) | 5. (2^{11} , 2^{21}) | 6. (8) | 7. (0) |
| 8. (b) | 9. (c) | 10. (c) | 11. (c) | 12. (8) | 13. (340) | 14. (c) |
| 15. (76) | 16. (d) | 17. (a) | 18. (c) | 19. (100) | 20. (8, 19) | 21. (360) |
| 22. (16) | 23. (4) | 24. (31) | 25. (292) | 26. (46) | 27. (a) | 28. (9) |

Chapter-6 : IO Organization

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|--------|---------|---------|------------------|---------|---------|-----------|
| 1. (c) | 2. (16) | 3. (b) | 4. 699.05 (4 ms) | 5. (a) | 6. (b) | 7. (b) |
| 8. (b) | 9. (d) | 10. (a) | 11. (18.3) | 12. (b) | 13. (c) | 14. (300) |