

2017*Time : 3 hours**Full Marks : 75*

Candidates are required to give their answers in their own words as far as practicable.

The questions are of equal value.

*Answer any five questions, selecting at least **one** from each group.*

GROUP-A

1. What is schema? Explain different types of schema that are used in database.
- ✓ 2. What is the E-R? Show different type of symbols that are used in E- R diagram. Draw an E-R diagram for "Registration System".
- ✓ 3. What is DBMS? Explain different types of DBMS Models.

4. Explain the following (any two) :
- (a) Codd's rule
 - (b) SQL
 - (c) Normalization

Group-B

5. What do you mean by operating system?
What are the different types of operating system?
6. What is scheduling? Explain the characteristics of long, short and middle term scheduling.
7. What is interprocess synchronization?
Explain semaphores and mutual exclusion.
8. What is deadlocks? Explain it with avoidance, detection and recovery.
9. Explain the followings -
- (a) FCFS
 - (b) Paging
 - (c) DMA

Group – C

- ✓ 10. What is semiconductor? What are the different types of semiconductors? Explain them.
11. What are the different types of resistance? Draw and explain the color code that is used to know the capacity of resistor.
12. What are the characteristics of BJT? Explain the CE, CB, CC, configurations.
13. Explain the following :
- (a) Zener diode
 - (b) Switching characteristics BJT & FET
 - (c) Multivibrators

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