Day: Friday	**W-2018-2355**	Time: 02.30 PM TO 05.30 PM
Date: 16/11/2018		Max. Marks: 60

N.B:

1) All questions are **COMPULSORY**.
2) Figures to the right indicate **FULL** marks.
3) Draw neat and labeled diagrams **WHEREVER** necessary.

Q.1 With the help of neat diagram, explain the system structure of DBMS. **(10)**

OR

Q.1 What is an ER diagram? What it is used for? List and explain the features of **(10)** extended ER diagram.

Q.2 What is functional dependency and multivalued dependency? Explain with **(10)** an example of each.

OR

Q.2 Explain the Cartesian product and renaming operation of relational algebra **(10)** with suitable example.

Q.3 List and explain the data definition commands in SQL with suitable **(10)** examples of queries.

OR

Q.3 What is a nested subquery? Why nesting of queries is required? Explain a **(10)** suitable example of nested query.

Q.4 Explain the Control structures in PL/SQL with their syntax. **(10)**

OR

Q.4 What are the types of variables that can be declared in PL/SQL? Explain the **(10)** declaration, input and output of variables in PL/SQL with example.

Q.5 What are the techniques used in database recovery management? Explain **(10)** any one in detail.

OR

Q.5 Why two phase locking protocol (2PL) is required? How deadlock can be **(10)** prevented?

Q.6 What is unstructured data? How is unstructured data processed? Why are **(10)** traditional databases not suitable for unstructured data?

OR

Q.6 What are the various features of Big Data? What are the emerging **(10)** technologies for Big Data processing?

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