III Semester B.A./B.Sc. Examination, Nov./Dec. 2018
(CBCS) (Fresh + Repeaters) (2015-16 and Onwards)
COMPUTER SCIENCE – III
Database Management System and Software Engineering

Time : 3 Hours   Max. Marks : 70

Instruction : Answer all Sections.

SECTION – A

I. Answer **any 10** questions. **Each** question carries **2** marks.   **(10×2=20)**

1) Define DBMS. Give any two examples of Databases.

2) Define the terms :
   i) Entity   ii) Attribute

3) What is a primary key ? Give an example.

4) What are prime and non-prime attributes ?

5) What is data redundancy ?

6) What is SQL ?

7) List the data types allowed in SQL.

8) Define software. What are the types of software products ?

9) What is agility ?

10) What is requirements engineering ?

11) What are UML models ?

12) What is software architecture ?

SECTION – B

II. Answer **any 5** of the following questions.   **(5×10=50)**

13) a) Explain program data independence and data abstraction.
    b) Write a short note on responsibilities of DBA.   **(5+5)**

14) a) Explain three level DBMS architecture with a neat diagram.
    b) What is an ER diagram ? Explain the ER notations used for various
       constructs used in database schema.   **(5+5)**

15) a) Explain UNION, Cartesian product operations in relational algebra with example.

b) What is Normalization ? Explain 3NF with an example. **(5+5)**

16) a) Write a note on relational calculus.

b) Explain DDL commands with an example. **(5+5)**

17) a) Briefly explain five aggregate functions in SQL.

b) Write the basic structure of PL/SQL with example. **(5+5)**

18) a) Explain the characteristics of software.

b) Explain waterfall model with a diagram. **(5+5)**

19) a) How are use cases developed ? Explain with an example.

b) What is DFD ? Explain the guidelines to create a DFD. **(5+5)**

20) a) What is coupling ? Explain different categories of coupling.

b) Write a short note on :

i) Unit testing

ii) Integration testing. **(5+5)**