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)

P.T.O.

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)**