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5193

Your Roll No

B.Sc. (Prog.)/III

J .

CS-302 – SOFTWARE ENGINEERING AND DATABASES

(NC – Admissions of 2005 & onwards)

Time 3 Hours

Maximum Marks 75

*(Write your Roll No on the top immediately
on receipt of this question paper)*

All questions are compulsory

- 1 (a) What is SCM ? What is the role ? (2)
- (b) A relation R is said to be in 3NF if and only if (2)
- (c) What is meant by Risk Management ? (2)
- (d) What do you understand by the terms 'tuple' and 'attribute' ? How are they related to the term 'domain' ? (3)
- (e) What is the difference between verification & validation activities (3)
- (f) What is the role of DBA ? (3)

P T O

- (g) Why cannot the primary key be NULL ? (1)
- (h) What is Normalisation ? Why is it needed ? (2)
2. (a) Differentiate between (Any two) –
- (i) Physical & Logical Data Independence
 - (ii) Internal, External and conceptual views of DBMS
 - (iii) Extension & Intension of a Relation
(3×2=6)
- (b) What is view ? Why is it used ? How is it defined ?
Discuss problems that may arise when one attempts to update a view (4)
3. (a) Explain the following S/W Development Process Models (any one)
- (i) Timeboxing Model
 - (ii) Spiral Model (4)
- (b) What is the goal of testing ? Why is the psychology of the tester important ? (2)
- (c) What is meant by recursive relationship type ?
Explain giving an example (3)

4 (a) Explain

(i) Why are tuples in a relation not ordered ?

(ii) Why are duplicate tuples not allowed in a relation ?

(iii) Why do we have a foreign key in database ?

(iv) Why is it important for a software developer to perform cost-benefit analysis ?

(1+1+1+2)

(b) What do you understand by functional dependency & fully functional dependency ? (2)

5 (a) Describe the 3-schema architecture ? Why do we need mapping between schema levels ? (6)

(b) Give the SQL statement for the following -

S(S# Sname, Status, City)

P(P#, Pname, Color, Weight, City)

J(J#, Jname, City)

SPJ (S#, P#, J#, Qty)

(i) Get color values for parts supplied by supplier S1

(ii) Get the total no of projects supplied by supplier S1

- (iii) Change the name of project 'J6' to 'VIDFO'
 - (iv) Get P# for parts supplied to any project in LONDON (8)
- (c) What is the difference between Cohesion and Coupling? (3)
- 6 (a) What are the limitations of the cost estimation model? (4)
- (b) Explain the different levels of testing and their goals. For each level, specify which of the testing approaches is most suitable (6)
- (c) What is the concept of weak entity in data modeling? Define the terms owner entity type, identifying relationship type and partial key (4)