Tribhuvan University
Institute of Science and Technology
2081
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Bachelor Level / Third Year /Fifth Semester/Science   Full Marks: 60
Computer Science and Information Technology (CSC315)   Pass Marks: 24
(System Analysis and Design)   Time: 3 hours.
(NEW COURSE)

Candidates are required to give their answers in their own words as for as practicable.
The figures in the margin indicate full marks.

Section A

Attempt any TWO questions.   **(2×10=20)**

1. Explain prototyping model with a neat diagram. List out its advantages and disadvantages.
                                                                                                  (6+4)

2. Draw reduced decision table for the following scenario: (10)
   An applicant has to fill up the form to participate in a music competition. The applicant's age should be greater than 18 years and nationality has to be Nepalese for being selected for the competition. The applicant will be provided registration number after paying Rs. 5000 as an entry fee. The applicant has to play instrument for three minutes else will be disqualified. The experts will provide points on the basis of some criteria. The applicant having the highest point will be declared winner and will get a cash price of Rs. 1,00,000 and all the qualified applicants will get gift hamper.

3. Differentiate between black box testing and white box testing. Explain the testing process.
                                                                                                  (4+6)

Section B

Attempt any EIGHT questions.   **(8×5=40)**

4. Briefly explain different phases of project management.   (5)

5. How can CASE tool help in developing product? Explain with respect to different phases of SDLC.   (5)

6. Draw use case diagram and class diagram for the following scenario: (5)
   The admin and user has to login to the patient record system. The user can see details of its records but will not be able to make changes. The changes will be controlled by admin. The admin has authority to generate reports and send it to doctors and users.

7. How do you think effective interfaces can be designed? Explain.   (5)

8. List the advantages of Normalization. Explain 2NF with an example.   (2+3)

9. Explain how disruptive technologies can be used in determining requirements.   (5)

10. Differentiate between process modeling and data modeling. How do you think data modeling play an important role?   (3+2)

11. An initial investment of Rs. 1,00,000 is required to start a company. The cashflow-in is Rs. 40,000 per year. Assuming interest rate as 10%, calculate the discounted payback period. (use Net Present Value)   (5)

12. Write short notes on: (2×2.5=5)
    a) PERT
    b) Deliverables