

Exam.	Regular / Back		
Level	BE	Full Marks	80
Programme	BCT	Pass Marks	32
Year / Part	III / I	Time	3 hrs.

Subject: - Software Engineering (CT 601)

- ✓ Candidates are required to give their answers in their own words as far as practicable.
- ✓ Attempt All questions.
- ✓ The figures in the margin indicate Full Marks.
- ✓ Assume suitable data if necessary.

1. a) Define software crisis. How can you say that there was software crisis in late 60s? [5]
b) Explain incremental model. Write its advantages and disadvantages. [4+3]
2. DFD level-0 and DFD level-1 for the case study given below. [3+5]
A travel agency wants an Airline Ticketing System to be developed for the office so that user can easily book flight tickets from anywhere. First of all, the customer enters the destination and data for the flight. After that, the system displays the available airlines for the same along with route or available time which is provided by the airlines company. Now the customer selects the airline which he/she finds appropriate where he/she can either book the ticket or confirm the ticket. The customer pays the ticket charge either via e-sewa or transferring the amount to the agency's bank account directly. The customer has to provide the valid email address to get the notification of booking or ticket confirmation.
3. a) What is software design architecture and what is its significance in software engineering? [2+3]
b) What are the common modular decomposition styles used in architectural design? Explain. [5]
4. How is a real-time software different from other software? What is a data acquisition system? [2+3]
5. Briefly describe advantages and disadvantages of software reuse. What is COTS reuse? [4+2]
6. What are the different factors to be considered before reusing software components. Explain. [5]
7. What is verification and validation? Explain their difference. Why is verification and validation planning necessary in software engineering? [3+2]
8. Write about stub and driver testing. Differentiate between white box and black box testing. [3+3]
9. Describe Cyclomatic Complexity as a software testing metrics. Use the concept of Halstead's metrics to compute the program length, program vocabulary, program volume, potential volume, program level, programming effort and time for the following code. [2+4]

```
Int x, y, z;  
z = 0;  
while ( x > 0 )  
{  
    z = z + y;  
    x = x - 1;  
}  
printf("%d",z);
```
10. a) What do you mean by Formal Technical Review (FTR)? How is a formal technical review conducted? [2+4]
b) Describe software reliability and SQA. [3+3]
11. Describe configuration management planning. [5]