DHARMSINH DESAI UNIVERSITY, NADIAD
FACULTY OF TECHNOLOGY
B.TECH. SEMESTER VI [IT]
SUBJECT: (CT-616) SOFTWARE ENGINEERING

Examination	: Block - Repeater	Seat No.	: _____
Date	: 05/04/2018	Day	: Thursday
Time	: 03:00 to 04:15pm	Max. Marks	: 36

INSTRUCTIONS:
1. Figures to the right indicate maximum marks for that question.
2. The symbols used carry their usual meanings.
3. Assume suitable data, if required & mention them clearly.
4. Draw neat sketches wherever necessary.

Q.1 Do as directed: **[12]**
- **(a)** What are drawbacks of classical waterfall model **[2]**
- **(b)** Define the term verification and validation. **[2]**
- **(c)** Mention the methods to calculate cyclomatic complexity of a program. **[2]**
- **(d)** Which are different types of interfaces. **[2]**
- **(e)** Draw context level and level-1 DFD for RMS calculator. **[2]**
- **(f)** The worst type of coupling is **[1]**
  - i. Data Coupling
  - ii. Stamp coupling
  - iii. Content coupling
  - iv. Control coupling
- **(g)** A COCOMO model is **[1]**
  - i. Common Cost Estimation Model.
  - ii. Constructive Cost Estimation Model.
  - iii. Complete Cost Estimation Model.
  - iv. Comprehensive Cost Estimation Model.

Q.2 Answer any two questions: **[12]**
- **(A)** Draw decision tree and decision table for following requirement. **[6]**
  To provide salary to the employees of a company, Accountant checks if employee is salaried person, if yes then basic salary is paid. If employee is on contractual / hourly basis and he has worked for less than 40 hrs then hourly wage is paid and absence report is generated. If contractual employee has worked exactly for 40 hrs then hourly wage has been paid and in case contractual employee works for more than 40 hrs then along with hourly wage he also gets overtime wage.
- **(B)** Define the term cohesion and coupling. Explain types of cohesion in detail. **[6]**
- **(C)** Write a short note on ISO 9000 certification **[6]**

Q.3 Answer the following: **[12]**
- **(A)** Draw Use case diagram for Employee leave management system. **[6]**
- **(B)** Explain performance testing in detail. **[6]**
OR
- **(A)** Draw Activity diagram for the given definition. **[6]**
  A departmental store maintains inventory of various products being sold by them. The products are classified under three categories – Fruits and Vegetables; Groceries and Cloths. All these items have different kinds of promotion schemes. You need to help departmental store to design an online stock management, stock pricing and discount system. Make necessary assumptions.
- **(B)** Explain COCOMO model in detail. **[6]**