

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATION- October 2017

B.Tech V Semester

COURSE CODE: Software Engineering

MAX. MARKS: 25

COURSE NAME: 10B11CI512

COURSE CREDITS: 4

MAX. TIME: 1Hr 30 Min

*Note: All questions are compulsory.*

1. [ 5 Marks]

- a. Is it necessary to design the system architecture before the specifications are written?
- b. Why is quality so important in software design?

2. [ 5 Marks]

- a. Describe software architecture in your own words.
- b. Suggest architecture for a system (such as iTunes) that is used to sell and distribute music on the Internet. What architectural patterns is the basis for this architecture?

3. [ 5 Marks ]

Develop a class diagram for online career counseling portal. You may make any reasonable assumptions about the system when deriving the design.

4. [ 5 Marks]

The department of Public works for shimla city has decided to develop a web-based pothole tracking and repair system. A description follows: Citizens can log onto a website and report the location and severity of potholes. As potholes are reported they are logged within a "public works department repair system" and are assigned an identifying number, stored by street address, size (on a scale of 1 to 10), location (middle, curb, etc.), district (determined from street address), and repair priority (determined from the size of the pothole). Work order data are associated with each pothole and include pothole location and size, repair crew identifying number, number of people on crew, equipment assigned, time required for repair, hole status (work in progress, repaired, temporary repair, not repaired), amount of filler material used, and cost of repair (computed from hours applied, number of people, material and equipment used). Finally, a damage file is created to hold information about reported damage due to the pothole and includes citizen's name, address, phone number, type of damage, and rupees amount of damage. PHTRS is an online system; all queries are to be made interactively. You'll have to make a number of assumptions about the manner in which a user interacts with this system. **Develop a Data Flow Diagram for the PHTRS system.**

5. [ 5 Marks]

**Explain the following terms:** Modularity, stepwise refinement, cohesion, coupling