FIRST QUESTION IS COMPULSORY.
ANSWER ANY FOUR FROM THE REMAINING QUESTIONS.
ALL QUESTIONS CARRY EQUAL MARKS.

1. Answer the following briefly:

(a) Software Architecture.

(b) Coupling.

(c) Configuration management.

(d) Design patterns.

(e) Quality Assurance.

(f) Random Testing.

(g) Team Toxicity.

(h) Walk throughs.

(i) Reverse Engineering.

2. Describe the models of the following processes:

(a) Lighting a wood fire.

(b) Cooking a three course meal (menu of your choice)

(c) Online course registration system.

(d) Writing a small (50-line) programs.

3. Suggest a contingency action plan for the following risks:

(a) Funds budget may fall short by 15% in the last phase of the cycle.

(b) Project manager may leaves in the middle of the project.

(c) System designer may have to leave to another country in three months.

(d) Customer may ask for compression of delivery schedule.

4. Develop the complete use case for the following:

(a) Using your debit card for a meal at restaurant.

(b) Searching for accommodation online in hotels of particular place.

5. You are a programming manager who has given the task of rescuing a project that is critical to the success of the company. Senior Management has given you are open-ended budget and you may choose a project team of up to five people from any other on going projects in the company. However, a rival company, working in the same area is actively recruiting staff and several staff working for you company has left to join them. Describe two models of programming team organization which might be used in this situation and make choice of one of these models. Give reasons for your choice and explain why gave you rejected for your company the alternative model.

6. Consider the Railway Reservation System and conduct OOA using analysis model and do the following tasks:

(a) Identify the use-cases and model them.

(b) Identify classes with properties.

(c) Identify the objects and draw sequence diagrams.

7. Draw three flow graphs that have equal cyclomatic number but which seem intuitively to rank differently in terms of structural complexity. What actual structural attributes are contributing to "complexity" in your examples? Find hierarchical measures that capture these attributes.

8. Write elaborative on software testing concepts and explain different testing properties in the software industry.