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| **C:\Users\naveed.IUGC\Desktop\logo.jpg**  **Final Term Examination Spring – 2021** | | | |
| **Subject** | Software Quality Assurance | **EDP / Section Code** |  |
| **Facilitator** | Ridah Fatima Muddassir | **Max. Marks** | 45 |
| **Exam Date** | 05-06-2021 | **Start Time** | 11:45 AM |
| **Submission Deadline** | 05-06-2021 | **End Time** | 02:45 PM |

**Question 1**

**Total Marks: 08**

**Problem Statement: *Software Quality Management***

Excelligence Pvt. Ltd is revamping their internal processes and organizational structure in pursuit of excellence. Lately the management of this company has changed and majority of the new team members are fresh and newly inducted in the company. Earlier the company was not following any standards or best practices. They had no clearly defined job descriptions and were following ad hoc processes. The intentions were to develop the products and deliver them to the customers. It was sort of reactive strategy and similar to CMMI level 1.

They have hired you to go through a rigorous evaluation and review of their existing processes to produce better quality products ranging from desktop applications to sophisticated mobile applications. The initial reviews entail the existence of Quality Management System (QMS) in place.

Deming’s improvement cycle will be followed in order to implement QMS at first place and later on the emphasis will be on adoption of defect prevention and detection techniques. Internal audits will be performed on predefined intervals to ensure that all the employees are following the defined and agreed processes and procedures.

**Required:**

1. **Suggest what components/functions are going to be implemented as part of QMS?**
2. **In your opinion, why Deming’s cycle has suggested for process improvement at Excelligence?**
3. **What defect prevention and detection techniques will you suggest if you were the consultant and why?**
4. **Why first part audit is being recommended? Can we have second party audit instead of first party audit?**

**Question 2**

**Total Marks: 07**

**Problem Statement: *Software Inspection and Reviews***

Evaluate the below mentioned process and formulate your recommendations related to what should be added or changed in the process to make it more effective and in line with the best practices followed in the industry?

Keeping in mind the problem statement presented in the first paragraph of the scenario, you need to:

1. **Identify the types of reviews that are being conducted in the company and in which phase they are being conducted**
2. **Evaluate existing reviews and see if they are correctly implemented i.e. follow the best practices and identify their shortcomings and co-relate which types of bugs mentioned in the problem statement might be the result of these shortcomings**
3. **Recommend adding new reviews to process and who should be involved in those new reviews**

**Required:**

Need to Evaluate the Review Process of ABC Soft:

Our Company (ABC Soft) is striving to implement a thorough process which should result in creating our software projects with high quality. To achieve this, we have embedded different Quality Control activities in our SDLC focusing specially on Reviews. Even after implementing this new process, we are not getting the desired results as our products still suffer from numerous issues. After performing a trend analysis of the feedback we received from our customers, we found that only around 20% of the customers think that our product had the desired set of requirements. Most of our customers think that our products are not scalable and efficient. Around 80% of our customers think that our products have more bugs than they were expecting. These defects range from missing features to unstable features. We are not sure why this is happening even after we have implemented a Review process at various stages in our SDLC.

We have now hired you to review our process and guide us what elements are missing in our QC process, especially regarding our Review process.

*Following is the brief description of our process:*

“After completing the work on Requirements document, Business Analyst needs to submit it to his lead who will review it and provide his feedback. After incorporating that feedback, the Requirements document is deemed final and provided to Architect for formulating the architecture of the application. After the architect completes his work, the Project Manager provides these documents to the required development team members for implementation. At the end of development, the code is reviewed by two Development Team Leads so as to ensure that code is following all the coding standards (i.e. comments, naming conventions are followed). In parallel to development activity, our QA team picks up the Requirement document and starts creating test cases. All test cases are created by the Test Lead. After the test cases are created, he schedules an Inspection process. He invites his QA team members and presents his cases to them and seek their feedback. The final outcome of the discussion is noted by the Secretary. At the end of the Inspection session, the Lead submit the final findings of the Inspection to his team members so that they can make the necessary amendments to the test cases.”