**kiitlogoSPRING MAKEUP MID SEMESTER EXAMINATION-2019**

**Subject: Quality Engineering & Management [ME 3037], Semester: 8th Full Marks: 20 Time: 1.5 Hours**

***Answer any FOUR questions including question No.1 which is compulsory.***

***The figures in the margin indicate full marks.***

***Candidates are required to give their answers in their own words as far as practicable and all parts of a question should be answered at one place only.***

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| 1. | (a) | What is the difference between ISO:9000 and ISO:14000? | [1 ] |
|  | (b) | What are the external failure costs of quality? | [1 ] |
|  | (c) | What is Quality circle? | [ 1] |
|  | (d) | Differentiate between producer risk and consumer risk. | [1 ] |
|  | (e) | Discuss the importance of fishbone diagram in quality control. | [1 ] |
| 2. | Define TQM. Explain the principles associated with it | | [5 ] |
| 3. | Explain the 14 points of Deming's quality philosophy. | | [ 5] |
| 4. | Discuss the seven problem solving tools of quality | | [5 ] |
| 5. | Plot the control charts for  and R using following sample data and a simple size of five. From the chart find out whether the process is in control.   |  |  |  | | --- | --- | --- | | Subgroup No |  | R | | 1 | 5.004 | .02 | | 2 | 5.204 | .08 | | 3 | 5.014 | .03 | | 4 | 5.008 | .05 | | 5 | 5.009 | .04 | | 6 | 5.016 | .09 | | 7 | 5.030 | .04 | | 8 | 5.010 | .04 | | 9 | 5.016 | .05 | | 10 | 5.010 | .07 | | |  |
| 6 | Short notes(Any Two) [2\*2.5]  (a) PDCA cycle  (b) Juran’s Trilogy  (c) Quality Cost | |  |

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