Reg.No. \_\_\_\_\_\_\_\_\_\_\_\_

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**End Semester Examination – Nov/Dec – 2018**

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| **Code :** | **14ME2005** | **Duration :** | **3hrs** |
| **Sub. Name :** | **MACHINING PROCESSES** | **Max. marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

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| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. | a. | List the difference between orthogonal and oblique cutting. | CO1 | 5 |
| b. | The useful tool life of HSS tool machining MS at 18 m/min is 3 hours. Calculate the tool life when it operates at 24m/min. | CO1 | 5 |
| c. | In an orthogonal turning operation, cutting speed is 80 m/min, cutting force 20 kg, feed force 8 kg, back rake angle 15 degrees, feed 0.2 mm/rev and chip thickness 0.4mm. Determine shear angle, work done in shear and shear strain. | CO1 | 10 |
| (OR) | | | | |
| 2. | a | What is chip thickness ratio? | CO1 | 3 |
| b | What are the factors responsible for tool failure? | CO1 | 3 |
| c | With neat sketches explain the four types of chip? | CO1 | 14 |
|  |  |  |  |  |
| 3. | a. | What is the mechanism used in shaper? | CO1 | 2 |
| b. | What is the difference between planaer and slotter? | CO1 | 3 |
| c. | Explain with a neat diagram the working principle of a Shaping Machine. | CO1 | 15 |
| (OR) | | | | |
| 4. | a. | Explain the nomenclature of a single point cutting tool with a neat sketch in detail. | CO1 | 5 |
| b. | With neat sketches explain various operations performed in a lathe. | CO1 | 15 |
|  |  |  |  |  |
| 5. | a. | With a neat sketch explain the various parts of a radial drilling machine? | CO1 | 12 |
| b. | Explain reaming and tapping with neat sketches. | CO1 | 8 |
| (OR) | | | | |
| 6. | a. | Differentiate between up milling and down milling with sketches. | CO1 | 10 |
| b. | Sketch plain milling cutter and explain the various elements of the cutter. | CO1 | 10 |
|  |  |  |  |  |
| 7. | a. | Difference between push and pull type broaching. | CO1 | 6 |
| b. | Explain detail the different types of grinding wheels. | CO1 | 14 |
| (OR) | | | | |
| 8. |  | Explain the following in detail with neat sketches:   1. Gear shaping. 2. Gear hobbing. | CO1 | 10+10 |
|  | |  |  |  |
|  | | **Compulsory**: |  |  |
| 9. | a. | What is the principle of LASER machining? | CO1 | 8 |
| b. | What is Abrasive Jet Machining? Explain its construction and working with suitable sketch. | CO1 | 12 |