Exam.Code:0940
Sub. Code: 33858

2055
B.E. (Mechanical Engineering)
Fourth Semester
MEC-404: Manufacturing Technology

Time allowed: 3 Hours **Max. Marks: 50**

NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Section.

x-x-x

1. Attempt the following:-

(i) What is tool life? Define.
(ii) Define feed and write its unit.
(iii) Distinguish between capstan and turret lathes.
(iv) What do you mean by 'thread tapping'? Answer briefly.
(v) How will you specify the milling machine?
(vi) What is broaching? Explain briefly.
(vii) Distinguish between shaper and slotter.
(viii) How planning machine is specified?
(ix) What is honing? Write its significance.
(x) What is the purpose of the gear teeth? 1 x 10 = 10

Section A **(Each Question: 10 Marks)**

2. (i) What do you mean by tool geometry? Give a simple sketch of a single point cutting tool and explain its nomenclature. Explain the function of turret indexing mechanism.
(ii) Explain the effect of operating parameters: cutting speed and depth of cut on forces and surface finish. Give effect graphs in support of your answer.

(1+ 3 + 2) + (2+2) = 10

3. (i) Explain the tail stock set over and compound swivelling taper turning methods for turning of taper on centre lathe. In support of your answer, give simple sketches for both the methods.
(ii) How will you specify the shaping machine? Answer briefly. Explain the working principle of quick return mechanism with a simple sketch.

5 + 5 = 10

4.(i) How drilling machines are specified? Give a simple sketch of a milling machine and explain its working principle.
(ii) What is indexing? State the basic rules of simple indexing and explain its importance in cutting of a spur gear.

(1 + 4) + 5 = 10

Section B **(Each Question: 10 Marks)**

5. (i) Give a simple sketch and label all elements of a general purpose grinding wheel. What is the process of truing? Explain. Also explain the method of codification of a grinding wheel with example.
(ii) What do you mean by 'gear finishing'? Explain with justification.

(2+ 2 + 2) + 4 = 10

6. (i) Explain the process of gear manufacturing by template method. What is hobbing process? Write its significance.
(ii) Explain the process of making threads using die heads. What is thread milling and how it is different from thread grinding? Explain briefly.

(3 + 1 +1) + (3+2) = 10

7. (i) What is metal coating? How it is different from metal spraying? Explain briefly.
(ii) State and explain the purpose of super finishing. Explain the function and importance of electroplating. What do you mean by 'grinding wheel loading'? Explain.

(1+2) + (3 + 2 +2) = 10

x-x-x