Roll No											

PRESIDENCY UNIVERSITY
BENGALURU

SCHOOL OF ENGINEERING
END TERM EXAMINATION - JAN 2023

Semester : Semester V - 2020
Course Code : MEC4040
Course Name : Sem V - MEC4040 - Manufacturing Engineering
Program : B.Tech. Mechanical Engineering

Date : 4-JAN-2023
Time : 9.30AM - 12.30PM
Max Marks : 100
Weightage : 50%

Instructions:
(i) Read all questions carefully and answer accordingly.
(ii) Question paper consists of 3 parts.
(iii) Scientific and non-programmable calculator are permitted.

PART A

ANSWER ALL THE FIVE QUESTIONS **5 X 2 = 10M**

1. How does rake angle affect the life of the cutting tool?

(CO1) [Knowledge]

2. Cutting fluids plays an important role tool life of material.List out the advantages of synthetic cutting fluids.

(CO2) [Knowledge]

3. List out the limitations of compression moulding

(CO3) [Knowledge]

4. Mention the few metals which can be converted into metal powder

(CO4) [Knowledge]

5. What are the basic components of NC system?

(CO5) [Knowledge]

PART B

ANSWER ALL THE SIX QUESTIONS **6 X 10 = 60M**

6. How do you differentiate between orthogonal and oblique cutting and also Explain the parameters that influence the life of tool

(CO1) [Comprehension]

7. Cutting tool materials selection plays an important role in defining the tool life of material.Explain the important properties of cutting tool material and also write short note on HSS and Carbon steel.

(CO2) [Comprehension]

8. What is injection moulding? Explain the injection moulding in plastics with neat sketch

(CO3) [Comprehension]

9. Describe Muda, mura and muri (3M's) used by Toyota company to improve the production rate with each example

(CO4) [Comprehension]

10. With the simple diagram explain the production of metal powder by Gas and water atomization process

(CO4) [Comprehension]

11. Explain the feature of CNC machine and also list out the advantages and disadvantages of CNC machining

(CO5) [Comprehension]

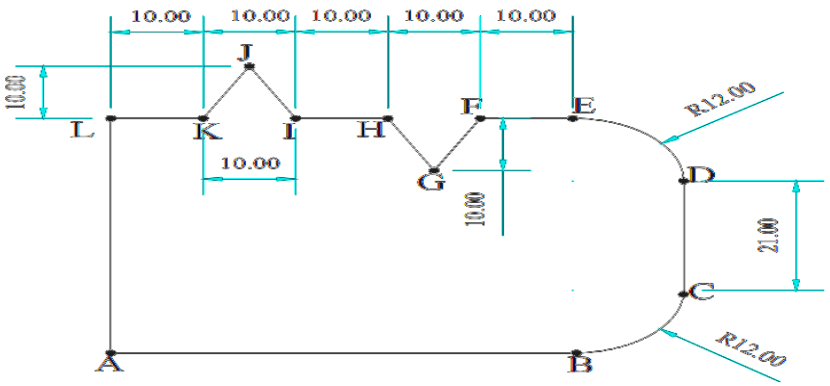
PART C

ANSWER ALL THE TWO QUESTIONS **2 X 15 = 30M**

12. The tool's life was discovered to be 1 hr 40 minutes at a spindle speed of 40 rpm when it was used to machine a mild steel work piece. If a tool needs to run at a speed that is 23% faster than the initial cutting speed, calculate the tool life. Calculate the cutting speed as well if the tool needs to last 165 minutes. Assume n=0.22 Taylor's exponent.

(CO1) [Application]

13. Write a program using milling cutter with diameter 10mm, spindle speed 1000 rpm, feed 0.05 and depth of cut 2mm in incremental system. All dimensions are in mm.



(CO5) [Application]

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