Prod

KGCE/PROD/VI/CBGS/Process Engg & Tooling/10.5.16

QP Code : 31631

(3 Hours) [Total Marks : 80

N.B.: (1) **Question 1** is compulsory. Attempt any 3 questions from the remaining.
(2) Use of tables, process sheets, index sheets, all provided by college is permitted.
(3) Assume suitable data, if required. State & justify it.

1. Attempt **any four** 20
   a) Explain PPC module in ERP briefly.
   b) With you own suitable examples, explain auxiliary & supporting operations.
   c) What are the causes of workpiece variation? Describe.
   d) How the case hardening process is carried out?
   e) What are the factors to be considered in DFA?

2. a) Explain the theory of Equilibrium. 20
   b) Explain clearly Generative & variant approaches in CAPP.
   c) What are the requirements of a good process engineer?
   d) Differentiate between In-process & multiple gauging.

3. a) Design and draw the Cams required for producing the part as shown in fig.1 on A-25 (Traub Automat). Assume v = 70m/min. 15

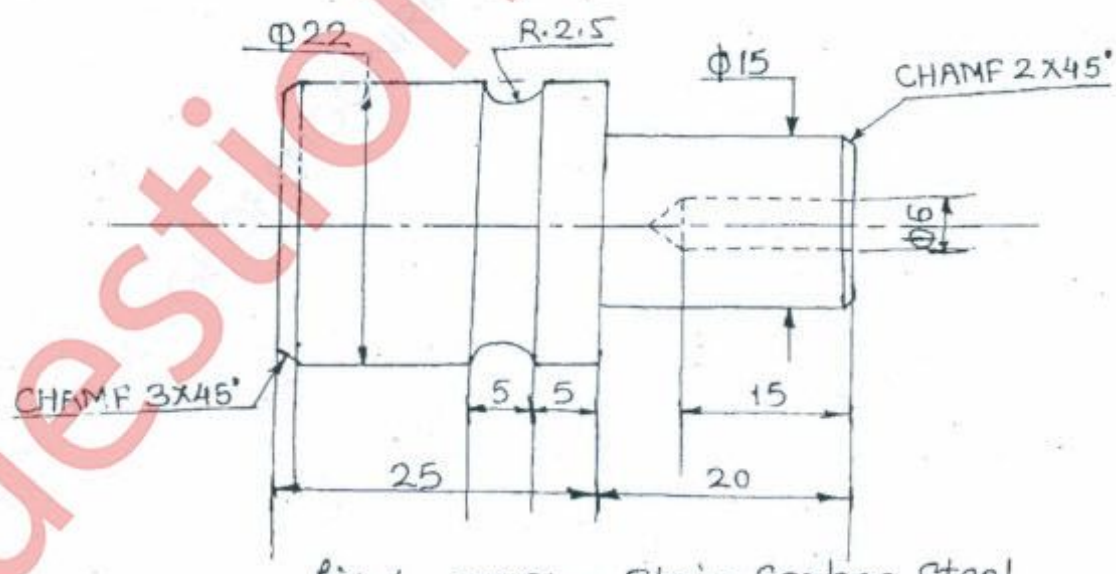

fig.1 MTRL – Plain Carbon Steel

Aslo calculate the output / hr. and piece rate at 90% efficiency.

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FW-Con.8158-16.

b) Explain role of process engineer in an organisation. 5

4. a) Differentiate between geometric, mechanical and dimensional control. 6
b) Explain in detail steps in part print analysis. 7
c) Explain in detail 'Classification of operations.' 7

5. a) What do you mean by Tolerance Stack? Explain it's difffernet types. 5
b) Explain elements of Tolerance chart with suitable examples. 5
c) Explain "Balancing of Tolerance chart." 5
d) Write short note on "Gear Hobbing." 5

6. The component "Master connecting Rod." shown in fig.2 is to be produced in batch of 1200/ week.
a) Draw the basic component diagram for it. 4
b) Prepare in standard tabulated format of process sheet showing all the machining parameters required to manufacture the part. 16

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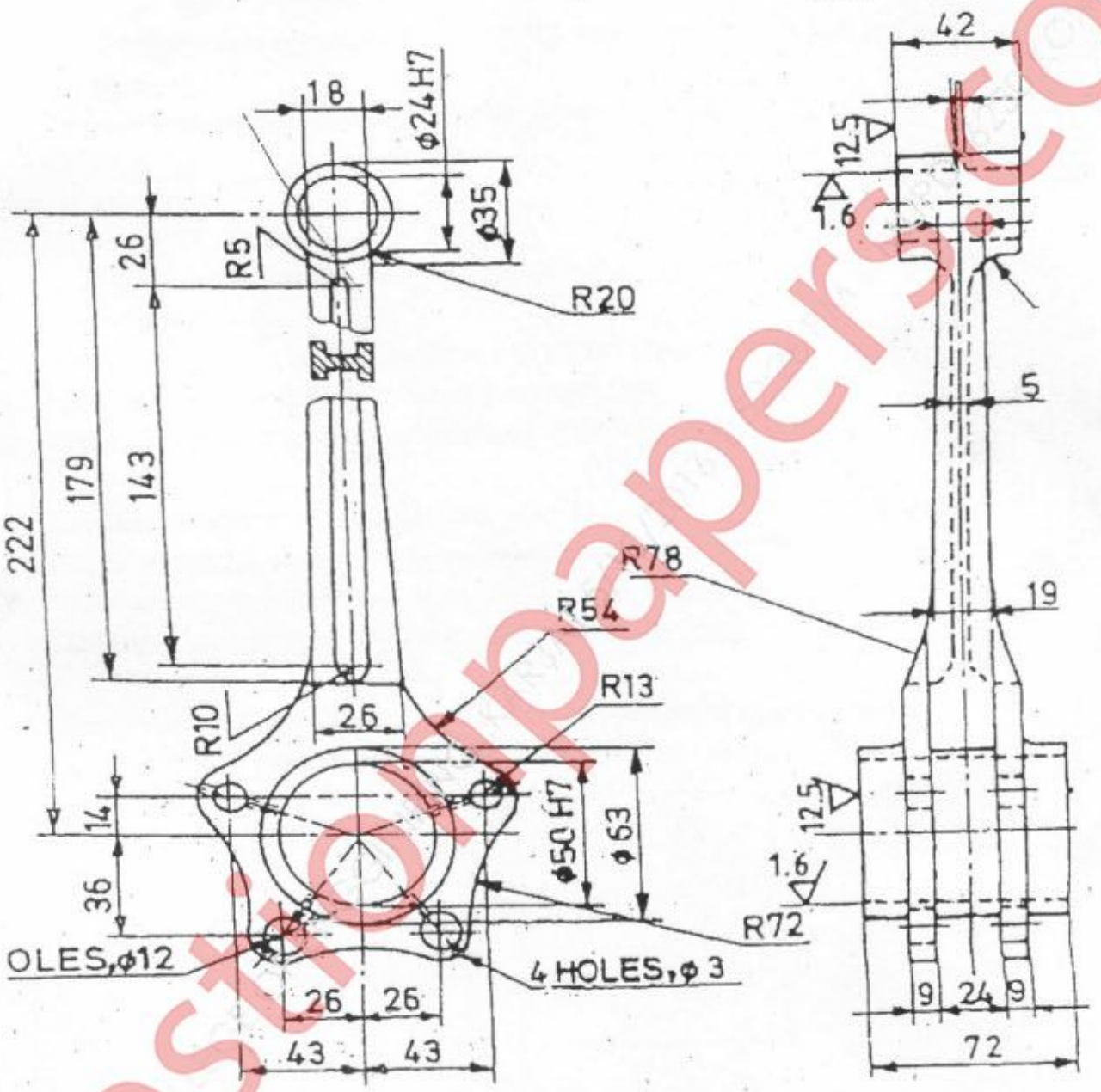

Φ50 H7 : $^{+0.025}_{+0.000}$

Φ24 H7 : $^{+0.021}_{+0.000}$

Fig. 2

Master Connecting Rod

MTRL → FG – EN-36