T.E (Production Engineering)(SEM-VI)(Choice Base) / DEC 2019/05.12.2019.



**[Time: 3 Hours]** **[Marks:80]**

Please check whether you have got the right question paper.

N.B:
1. Questions no. 1 is compulsory.
2. Attempt any three questions from remaining five questions.
3. State and justify the assumptions clearly wherever required.
4. Provide neat sketches to illustrate your answer.

Q.1 Answer the following. **(Any four)** **(20)**

a) What information is transferred from product engineer to the process engineer?

b) Differentiate between Explicit Specification and Implicit Specification.

c) Convert the given dimensions into equal bi-lateral tolerances.

i) $24.48^{-0.22}_{-0.44}$ ii) $9.82^{+0.12}_{-0.08}$

d) How functional surfaces on the work piece are generally identified?

e) What are the causes of work piece variation?

Q.2 a) The part guide pin shown in Fig. 1 is to be produced on TRAUB Automat. **(16)**

i) Draw the tool layouts

ii) Prepare the tabulated results

iii) Calculate output per hour and piece rate

iv) Draw the set of cams

b) Explain internal type centreless grinding in brief **(04)**

Q.3 a) What are the various approaches to process planning? **(04)**

b) Explain Balancing in case of tolerance chart. **(04)**

c) Prepare the tolerance chart for the given component shown in Fig. 2. **(12)**

Q.4 a) Discuss part print analysis for the component Inter-connecting shaft shown in Fig. 3. **(16)**

b) Differentiate between Secondary process operations and critical operations. **(04)**

Q.5 a) What is dimension control? Why is it necessary? What are its advantages? **(05)**

b) Explain "Degrees of Freedom". **(05)**





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c) Short note **(Any Two)** **(10)**

i) Auxiliary process operation

ii) in - process gauging

iii) ISO specification for OD turning tool holder.

Q.6 The component inter connecting shaft shown in figure 3 is to be manufactured at an annual rate of 1,00,000 nos / year.

a) Develop the basic component drawing with appropriate machining allowance and achievable tolerance in basic process you have selected. **(04)**

b) In standard format prepare detailed process sheet. **(16)**

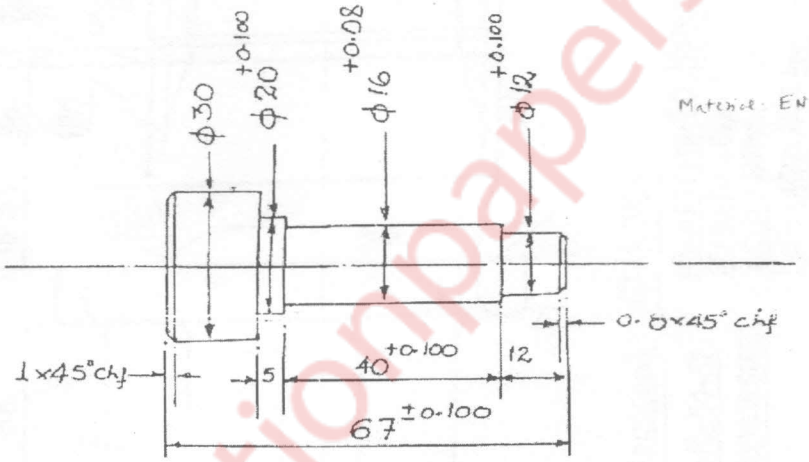


*Fig. No. 1*

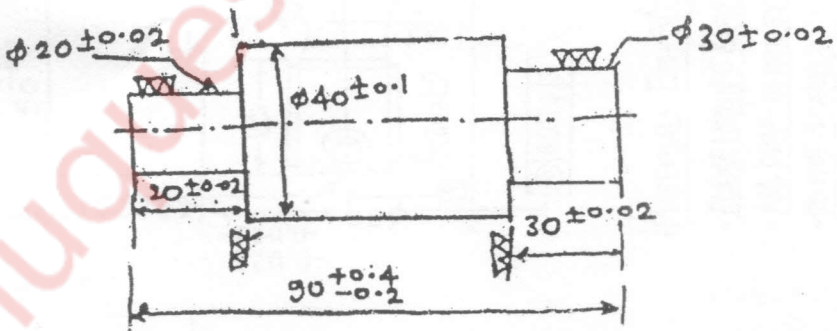


*Fig. No. 2*





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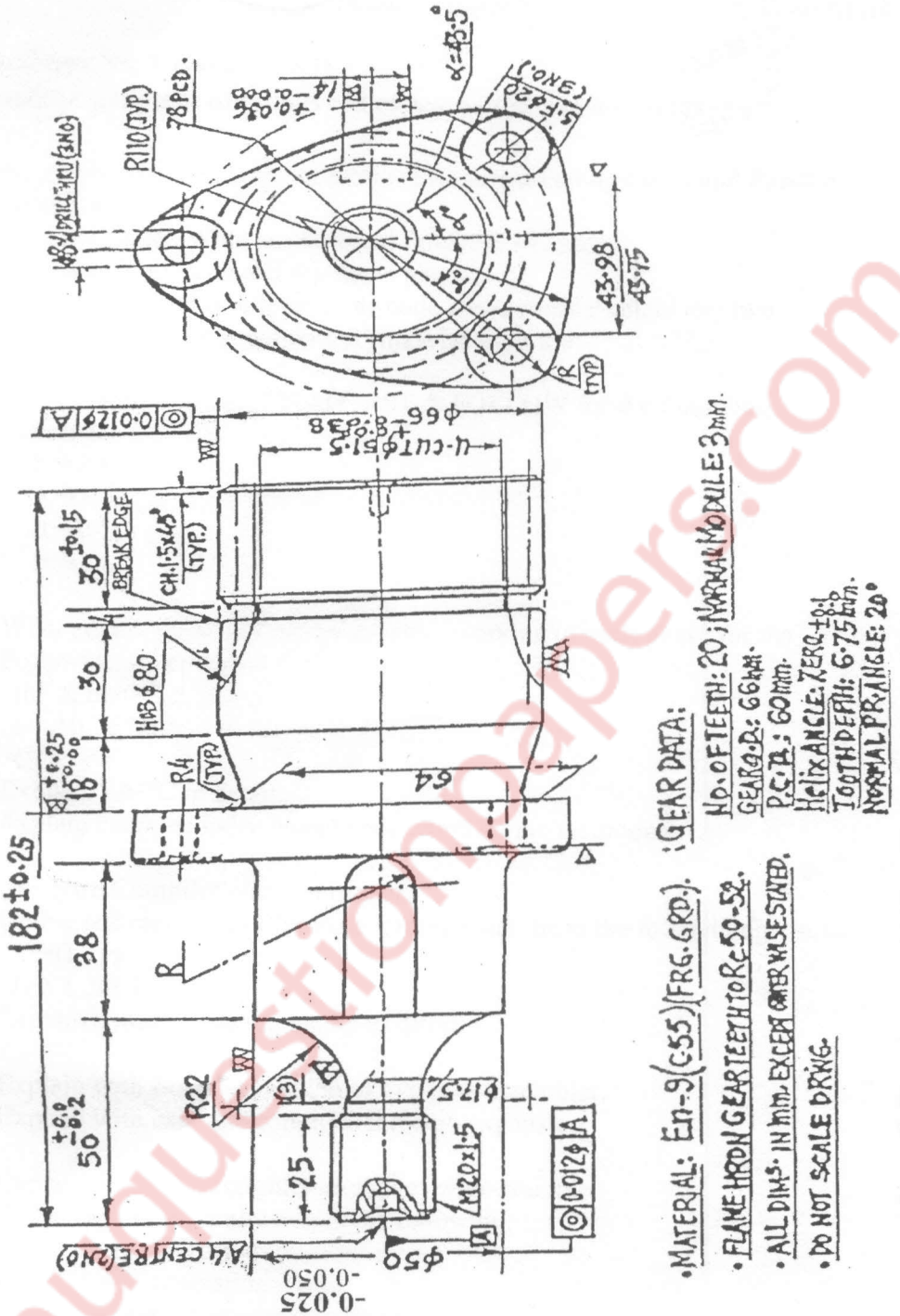


Inter - connecting shaft fig. 3

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