17403

21314

3 Hours / 100 Marks Seat No. | | | | | | | | |

Instructions – (1) All Questions are *Compulsory.*

(2) Answer each next main Question on a new page.

(3) Illustrate your answers with neat sketches wherever necessary.

(4) Figures to the right indicate full marks.

(5) Assume suitable data, if necessary.

(6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. a) **Attempt any <u>SIX</u> of the following:** **12**

i) Define forging.

ii) List four materials used in press work.

iii) State four advantages of welding process.

iv) Define welding.

v) List any two needs of surface treatment process.

vi) State meaning of following functions of programming codes

1) G90

2) G94

vii) List any four advantages of CNC Machines.

viii) List any two limitations of forging process.

Marks

b) **Attempt any <u>TWO</u> of the following:** **08**

i) Write classification of forging process.

ii) Compare drop forging and press forging

iii) Draw simple labelled sketches showing forging sequence for manufacturing connecting rod.

2. Attempt any <u>FOUR</u> of the following: **16**

a) List four advantages of forging process.

b) Draw simple labelled sketches showing forging sequence for manufacturing spanner.

c) Explain with neat labelled sketch pilot and stops as die accessories.

d) List any four die accessories and write their functions.

e) Give classification of presses.

f) Explain blanking operation on a press with neat sketch.

3. Attempt any <u>FOUR</u> of the following: **16**

a) Explain drawing operation on press with neat sketch.

b) Compare brazing and soldering on basis of

i) temperatures used

ii) filler material

iii) joint strength

iv) application

c) Explain with simple sketch, the method of welding used in manufacturing automobile bodies.

d) Classify welding process on basis of methods of heat generation.

e) List types of gas flames used in oxy acetylene welding and write their applications.

f) Differentiate between compound die and combination die.

Marks

4. Attempt any <u>FOUR</u> of the following: **16**

a) Explain TIG welding with neat sketch.

b) Compare electroplating and galvanizing process.

c) Describe abrasive blast cleaning process and list any two applications.

d) Explain micro finishing process used to correct hole geometry in component.

e) List any four components of CNC Machine and write their functions.

f) Give classification of CNC Machines.

5. Attempt any <u>FOUR</u> of the following: **16**

a) Differentiate between NC and CNC machines.

b) Explain incremental programming method with suitable example.

c) Describe Qualified tools. List its four advantages.

d) Write procedure for developing part program on CNC Milling.

e) State G-code and M-code. State functions of programming codes

i) M02 and

ii) M06

f) State principle of lapping and list four applications of lapping.

Marks

6. Attempt any <u>TWO</u> of the following: **16**

a) Draw a neat sketch of fly press. Write its construction and working.

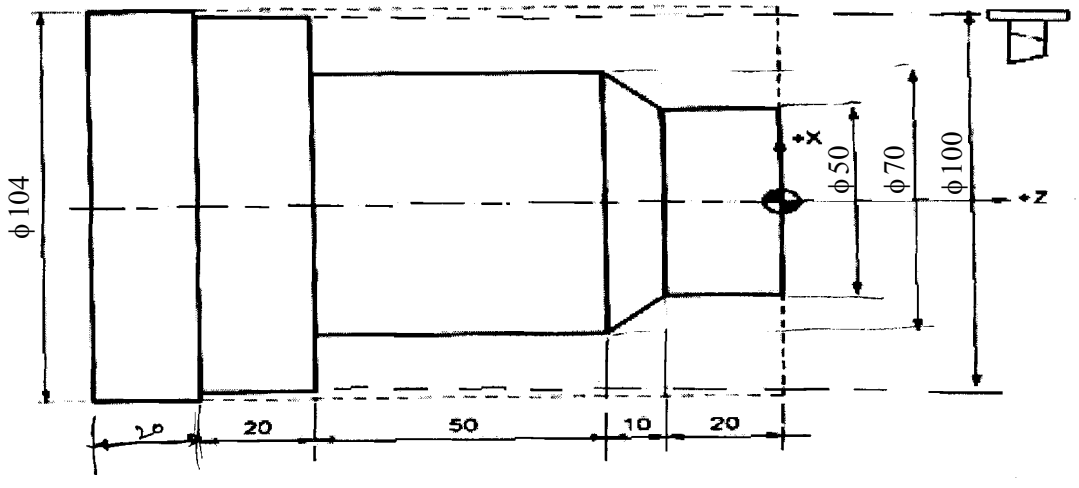
b) Explain axis configuration as per ISO for horizontal and vertical spindle CNC machines.

c) Write part program for component shown in Figure No.1 on CNC lathe machine use

i) feed rate in mm/rev

ii) feed rate 0.25 mm/rev

iii) speed = 400 rpm.



<u>Fig. No. 1</u>

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