

AGJ 1st half (f+) 1

Con. 9966-13.

GS-9168

(3 Hours)

[ Total Marks : 100

N.B. : (1) Question No. 1 is compulsory.

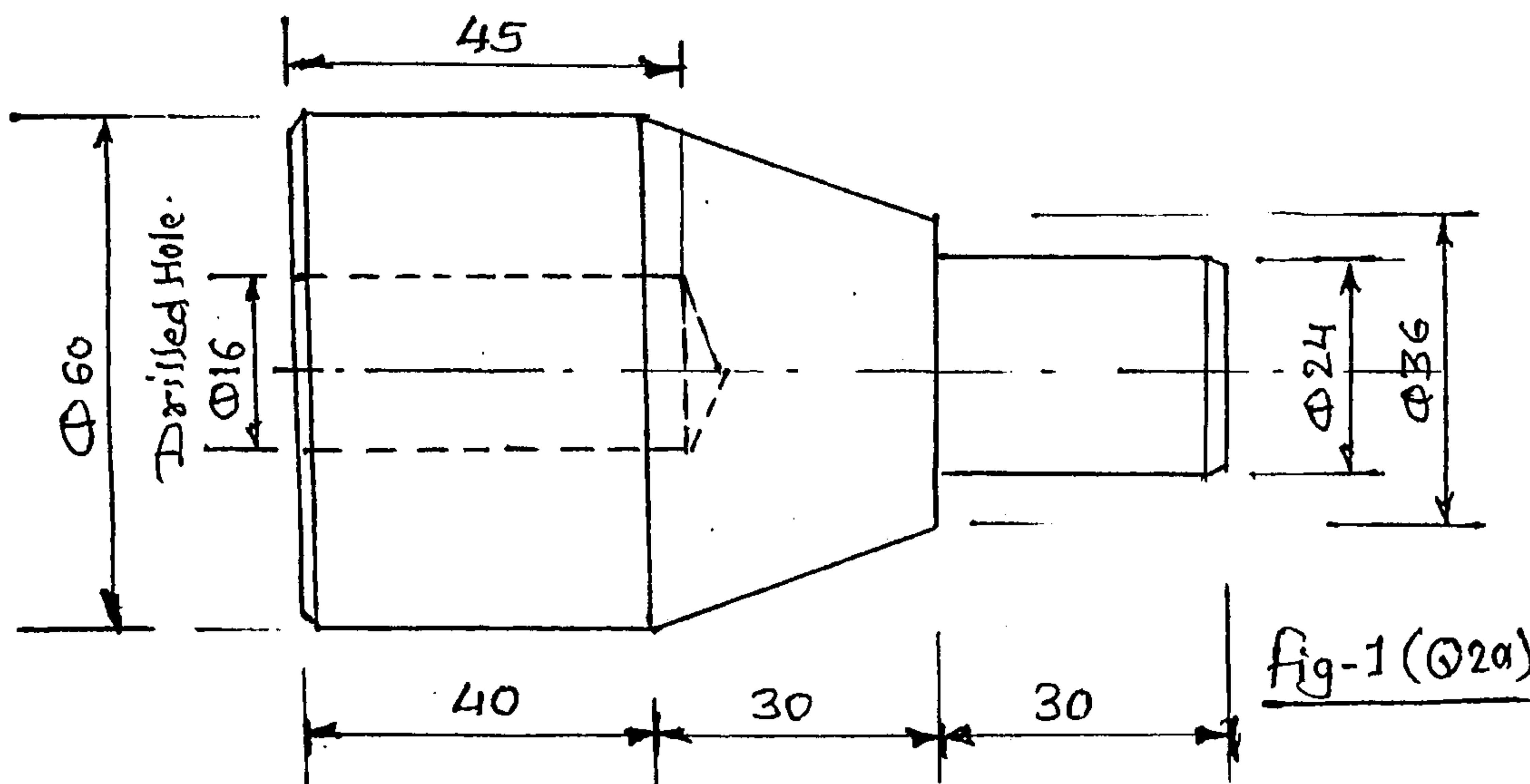
(2) Attempt any four questions from remaining six questions.

(3) Draw neat sketches wherever necessary.

(4) All dimensions mentioned are in mm.

(5) Use of standard code sheets for G and M codes is permitted.

1. (a) Explain the term ergonomics. Which are the factors to be considered for an ergonomic design of Car-Driver's seat. 8
- (b) Explain importance of computers in manufacturing. 6
- (c) Draw neat labelled sketch of a lathe showing main parts. 6
  
2. (a) For the given component shown in Fig-1, prepare a suitable process plan mention clearly the operation number, description of the operation, the machine used, tooling used and measuring instruments required. 12



- (b) What are objectives and advantages of SQC ? Explain any two SQC tools in detail. 8

3. (a) Prepare a CNC part programme for milling a slot of 6 width and 3 depth along with a 12 drilled hole as shown in fig.2 (Manual part programme using G and M codes.

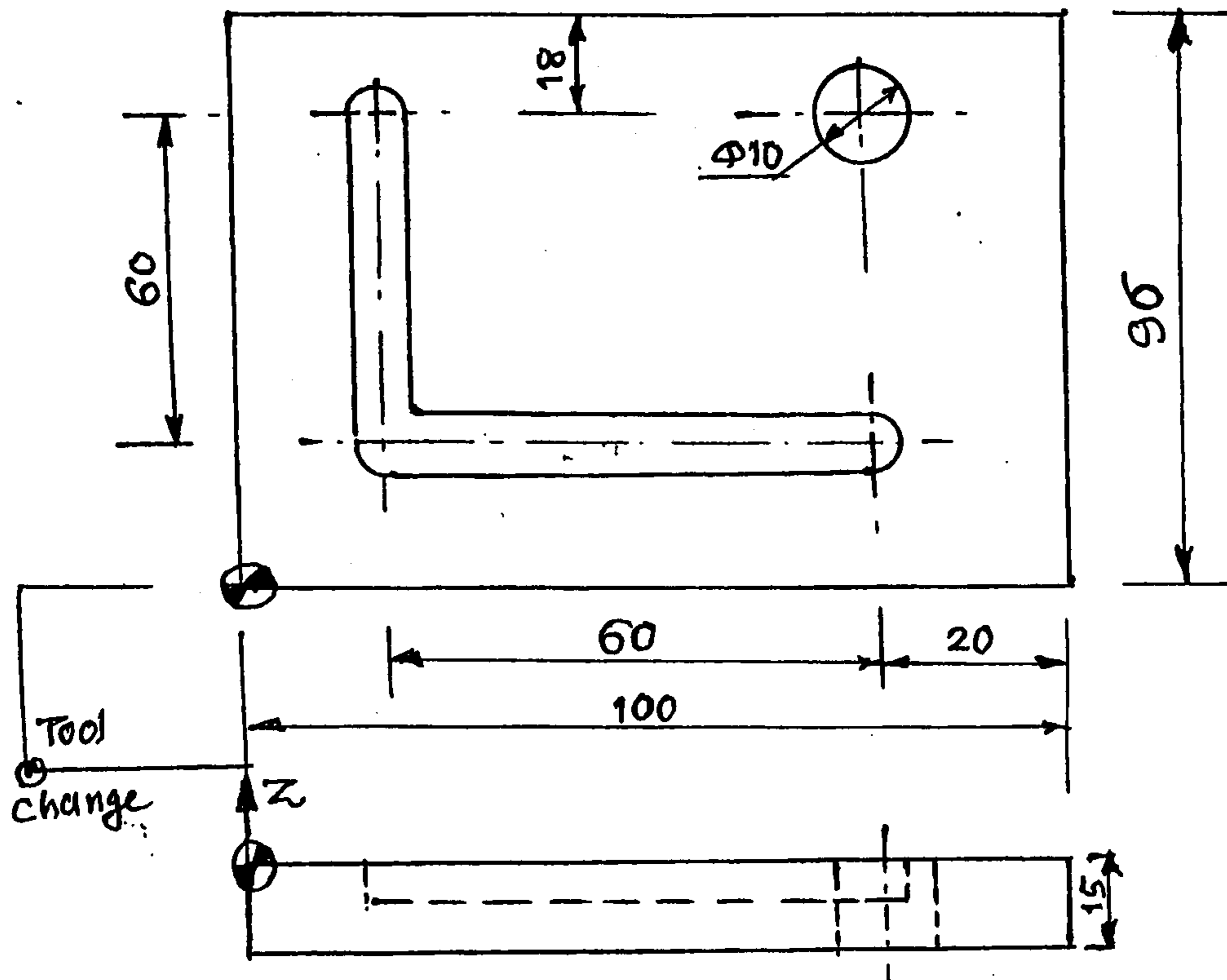


Fig- 2(Q3a)

- (b) What is resistance welding ? Explain any one resistance welding process. 8
4. (a) Construct  $\bar{X}$  and R chart for the following data and state whether the process is able to meet the specifications or not. 12

Batch No.	1	2	3	4	5	6
$\bar{X}$	23.76	23.77	23.75	23.79	23.75	23.83
R	0.07	0.11	0.06	0.08	0.04	0.05

$A_2 = 0.48, D_3 = 0, D_4 = 2.00$

- (b) Explain in detail, the concept of T.Q.M. Discuss various quality activities involved in T.Q.M. 8

**Con. 9966-GS-9168-13.**

**3**

5. (a) What is the role of demand management in Assemble-to-order environment ? **6**  
(b) Write note on Just-In-Time (JIT). **8**  
(c) What is MPS (Master Production Schedule) ? State its main objectives. On what basis it is prepared ? **6**
6. (a) Explain with neat sketch open loop and closed loop motion control system in NC/CNC machines. Also state their advantages. **8**  
(b) Explain the extrusion process. **6**  
(c) What are different types of plastics ? Explain properties of plastics. **6**
7. Write short notes on the following :- **20**
- (a) Flexible manufacturing system
  - (b) Group Technology
  - (c) Types of capacities in capacity planning
  - (d) Differentiate product layout and process layout.
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