



Important Instructions to examiners:

- 1) The answers should be examined by key words and not as word-to-word as given in the model answer scheme.
- 2) The model answer and the answer written by candidate may vary but the examiner may try to assess the understanding level of the candidate.
- 3) The language errors such as grammatical, spelling errors should not be given more Importance (Not applicable for subject English and Communication Skills).
- 4) While assessing figures, examiner may give credit for principal components indicated in the figure. The figures drawn by candidate and model answer may vary. The examiner may give credit for any equivalent figure drawn.
- 5) Credits may be given step wise for numerical problems. In some cases, the assumed constant values may vary and there may be some difference in the candidate's answers and model answer.
- 6) In case of some questions credit may be given by judgement on part of examiner of relevant answer based on candidate's understanding.
- 7) For programming language papers, credit may be given to any other program based on equivalent concept.

Q1 A)

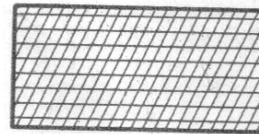
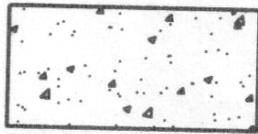
Conventional Representation

02 MARKS FOR EACH ANY SIX

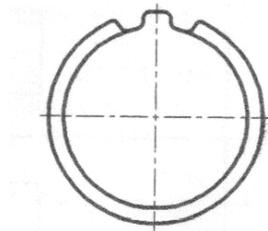
a) Concrete

Insulating material

(01 mark each)

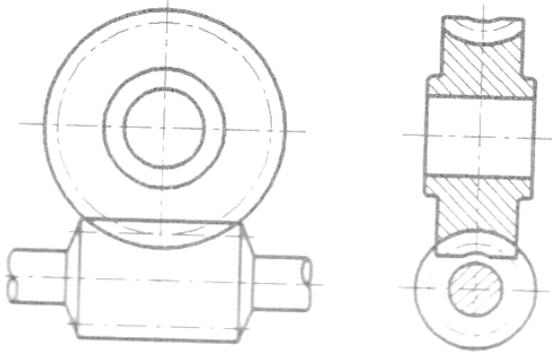


b) Splined Shaft

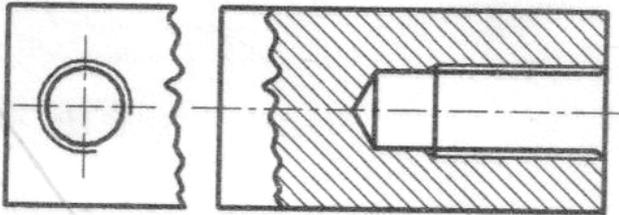




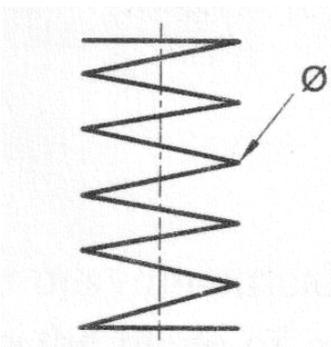
c) Worm gear



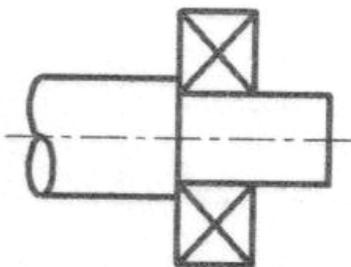
d) Internal Thread



e) Helical spring with flat end

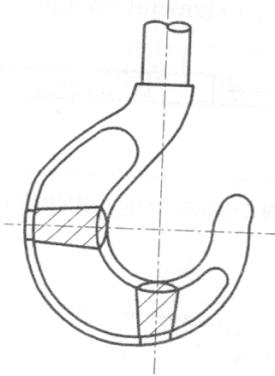


f) Roller Bearing



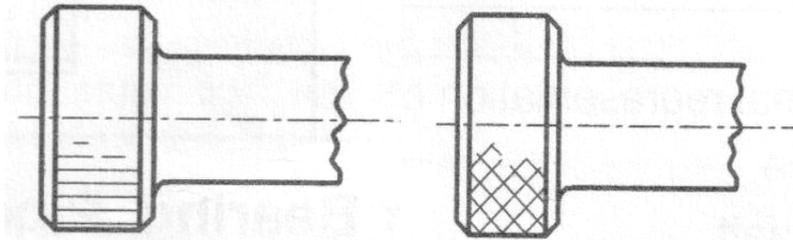


g) Revolved Section (section like following figure or equivalent other figure may be considered)



h) Knurling (Straight)

(Diamond) (any one type may be considered)



Q 1 B) ANY TWO

a) X= Datum plane A

04 MARKS

Y= (Angularity <) The axis of inclined hole must lie between two parallel straight line 0.04

Apart which are inclined at 60° to the datum plane A

Q 1 B) b) State the meaning of following symbols

04 MARKS

i) Roughness grade ii) Concentricity or coaxially with datum plane/axis A

iv) 21= Basic size ,H= Fundamental deviation , 6= Tolerance grade

v)) 21= Basic size ,K= Fundamental deviation, 5= Tolerance grade



Q 1 B) C)

04 MARKS

Max allowance = upper limit of hole - lower limit of shaft

$$= 35.00 - 35.00$$

$$= 0.00 \text{ (equal)}$$

Min allowance = lower limit of hole - upper limit of shaft

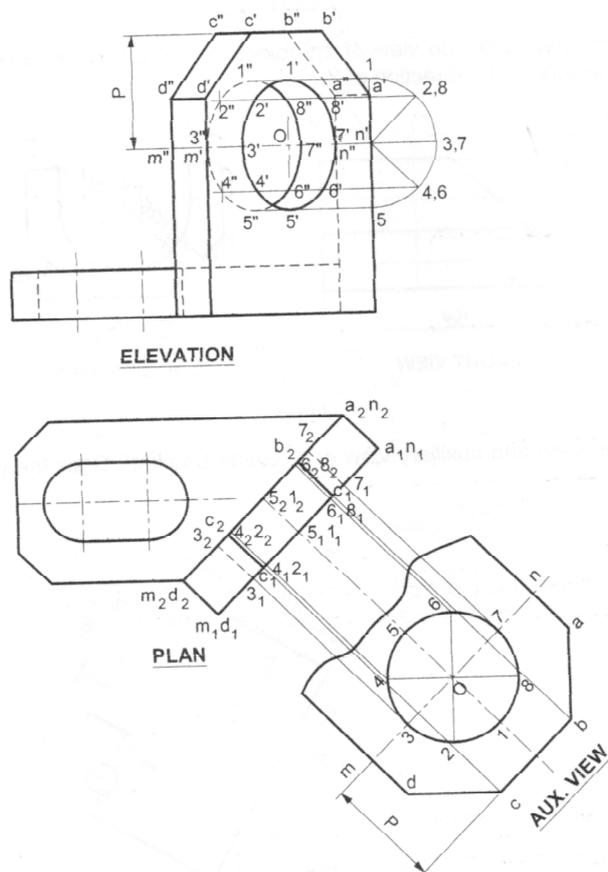
$$= 35.00 - 35.04$$

$$= -0.04 \text{ (-ve)}$$

Interference fit

Q2 A) Auxillary View

Elevation= 6 marks, redraw plan = 3 marks, redraw auxiliary View= 3 marks





Q2 B) ANY TWO

1) SYMBOLS FOR GEOMETRICAL TOLERANCE 04 MARKS , 01 MARK FOR EACH

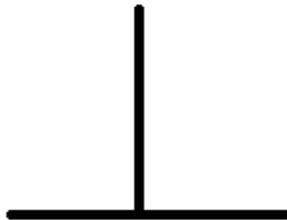
a) Concentricity



b) Parallelism



c) perpendicularity



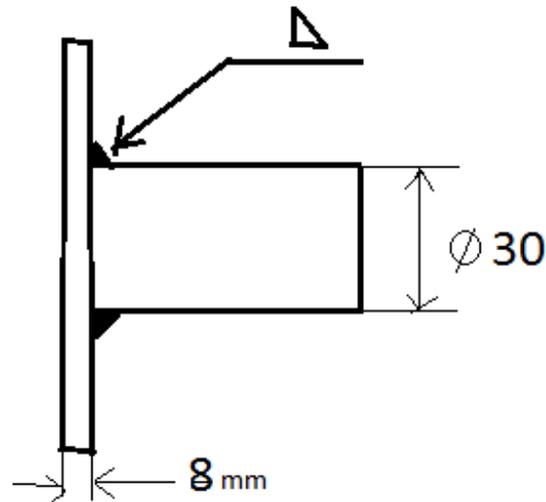
d) Profile of any surface





2) Welding drawing

04 MARKS



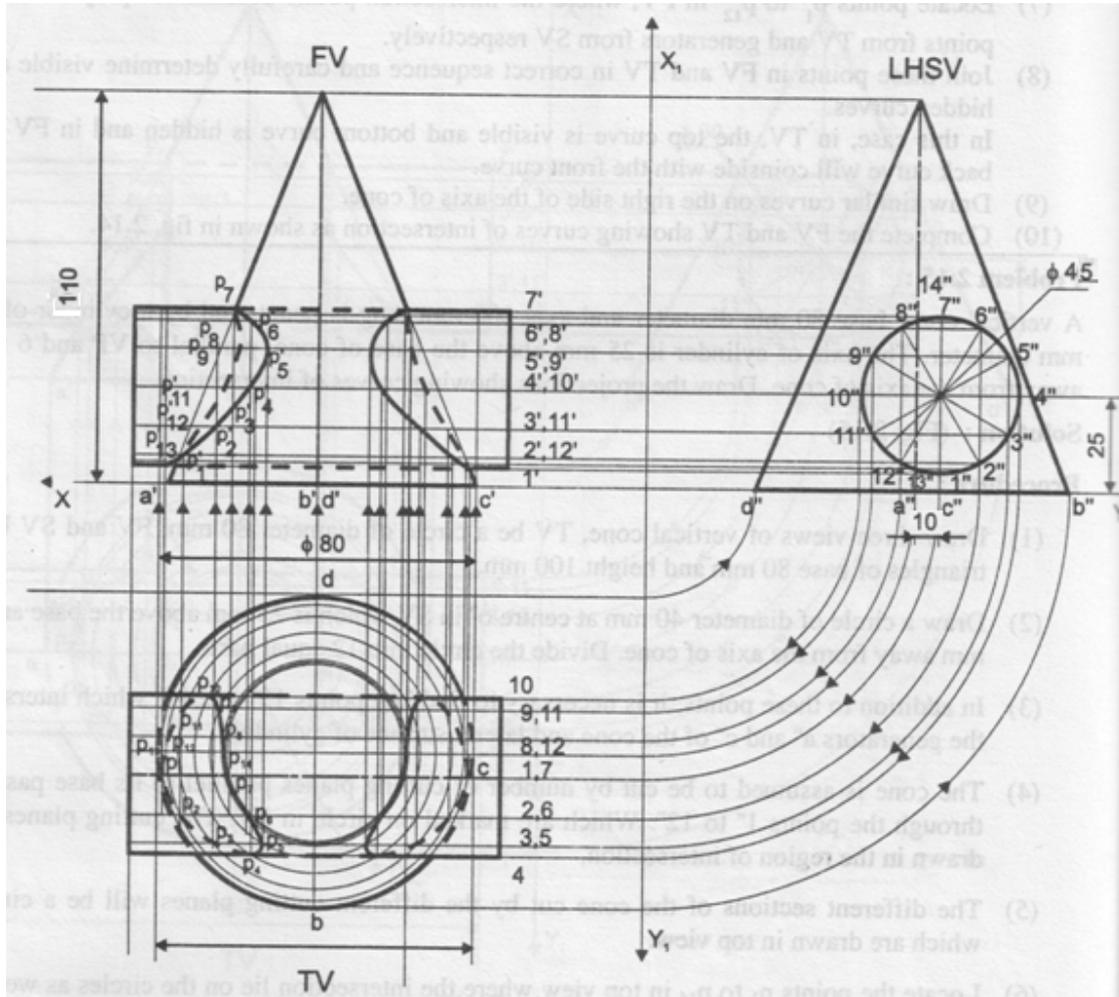
3) State meaning of following symbols

04 MARKS

- 6 = Roughness value in Ra
- 2 = Machining allowance
- \parallel = Direction of lays(parallel)
- 0.5 = Sampling length
- Milling = Manufacturing method

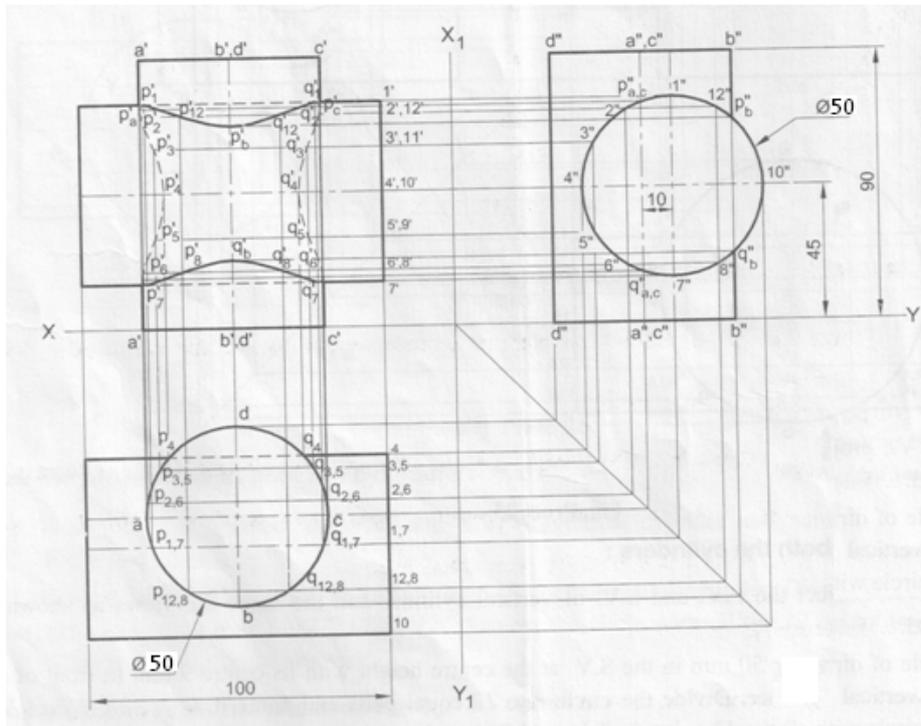


Q 3 a) Front view 04 marks, Top view 04 marks, Side view 02 marks

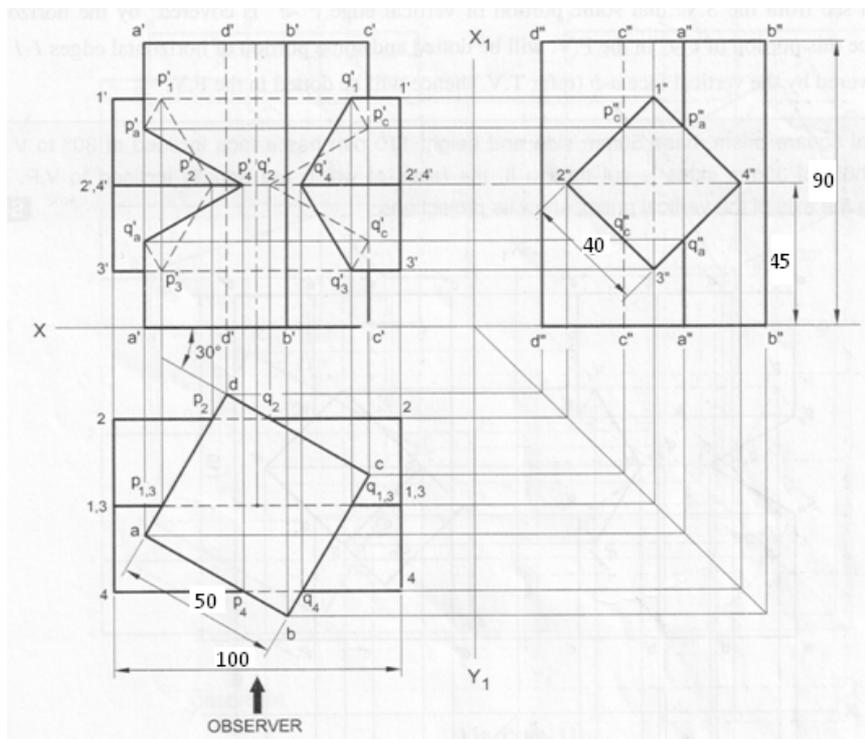




Q 3 b) Front view 04 marks, Top view 04 marks, Side view 02 marks



Q 3 c) Front view 04 marks, Top view 04 marks, Side view 02 marks



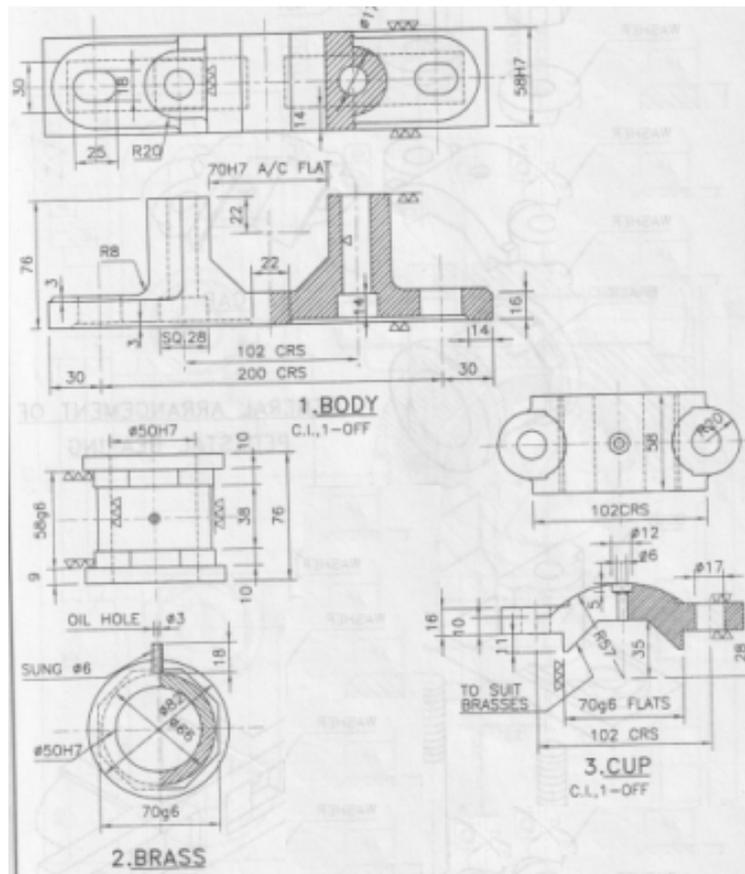


Q 5 a) Body – half sect. FV and TV 10 marks

Cup - FV and TV 04 marks

Brass - FV and TV 04 marks

other 02 marks





Q 5 b) Jig Plate -FV and TV 06 marks

Stem - Sect. FV and TV 08 marks

Base plate - FV and TV 06 marks

