

Question Paper Solution

2023

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Marking Scheme
Strictly Confidential
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Senior School Certificate Examination, 2023
SUBJECT NAME – ENGINEERING GRAPHICS (SUBJECT CODE 046) (PAPER CODE 68)

General Instructions: -

1	You are aware that evaluation is the most important process in the actual and correct assessment of the candidates. A small mistake in evaluation may lead to serious problems which may affect the future of the candidates, education system and teaching profession. To avoid mistakes, it is requested that before starting evaluation, you must read and understand the spot evaluation guidelines carefully.
2	**"Evaluation policy is a confidential policy as it is related to the confidentiality of the examinations conducted, Evaluation done and several other aspects. Its' leakage to public in any manner could lead to derailment of the examination system and affect the life and future of millions of candidates. Sharing this policy/document to anyone, publishing in any magazine and printing in News Paper/Website etc may invite action under various rules of the Board and IPC."**
3	Evaluation is to be done as per instructions provided in the Marking Scheme. It should not be done according to one's own interpretation or any other consideration. Marking Scheme should be strictly adhered to and religiously followed. **However, while evaluating, answers which are based on latest information or knowledge and/or are innovative, they may be assessed for their correctness otherwise and due marks be awarded to them. In class-X, while evaluating two competency-based questions, please try to understand given answer and even if reply is not from marking scheme but correct competency is enumerated by the candidate, due marks should be awarded.**
4	The Marking scheme carries only suggested value points for the answers These are in the nature of Guidelines only and do not constitute the complete answer. The students can have their own expression and if the expression is correct, the due marks should be awarded accordingly.
5	The Head-Examiner must go through the first five answer books evaluated by each evaluator on the first day, to ensure that evaluation has been carried out as per the instructions given in the Marking Scheme. If there is any variation, the same should be zero after deliberation and discussion. The remaining answer books meant for evaluation shall be given only after ensuring that there is no significant variation in the marking of individual evaluators.
6	Evaluators will mark(√) wherever answer is correct. For wrong answer CROSS 'X" be marked. Evaluators will not put right (while evaluating which gives an impression that answer is correct and no marks are awarded. **This is most common mistake which evaluators are committing.**
7	If a question has parts, please award marks on the right-hand side for each part. Marks awarded for different parts of the question should then be totaled up and written in the left-hand margin and encircled. This may be followed strictly.
8	If a question does not have any parts, marks must be awarded in the left-hand margin and encircled. This may also be followed strictly.
9	If a student has attempted an extra question, answer of the question deserving more marks should be retained and the other answer scored out with a note **"Extra Question"**.

10	No marks to be deducted for the cumulative effect of an error. It should be penalized only once.
11	A full scale of marks 70 has to be used. Please do not hesitate to award full marks if the answer deserves it.
12	Every examiner has to necessarily do evaluation work for full working hours i.e., 8 hours every day and evaluate 20 answer books per day in main subjects and 25 answer books per day in other subjects (Details are given in Spot Guidelines).This is in view of the reduced syllabus and number of questions in question paper.
13	Ensure that you do not make the following common types of errors committed by the Examiner in the past:- Leaving answer or part thereof unassessed in an answer book. Giving more marks for an answer than assigned to it. Wrong totaling of marks awarded on an answer. Wrong transfer of marks from the inside pages of the answer book to the title page. Wrong question wise totaling on the title page. Wrong totaling of marks of the two columns on the title page. Wrong grand total. Marks in words and figures not tallying/not same. Wrong transfer of marks from the answer book to online award list. Answers marked as correct, but marks not awarded. (Ensure that the right tick mark is correctly and clearly indicated. It should merely be a line. Same is with the X for incorrect answer.) Half or a part of answer marked correct and the rest as wrong, but no marks awarded.
14	While evaluating the answer books if the answer is found to be totally incorrect, it should be marked as cross (X) and awarded zero (0)Marks.
15	Any un assessed portion, non-carrying over of marks to the title page, or totaling error detected by the candidate shall damage the prestige of all the personnel engaged in the evaluation work as also of the Board. Hence, in order to uphold the prestige of all concerned, it is again reiterated that the instructions be followed meticulously and judiciously.
16	The Examiners should acquaint themselves with the guidelines given in the "**Guidelines for spot Evaluation**" before starting the actual evaluation.
17	Every Examiner shall also ensure that all the answers are evaluated, marks carried over to the title page, correctly totaled and written in figures and words.
18	The candidates are entitled to obtain photocopy of the Answer Book on request on payment of the prescribed processing fee. All Examiners/Additional Head Examiners/Head Examiners are once again reminded that they must ensure that evaluation is carried out strictly as per value points for each answer as given in the Marking Scheme.

General Note:	
a)	Marks are to be awarded in proportion to the work done.
b)	Mistakes in dimensioning up to ± 1.0 mm may be ignored.
c)	In dimensioning, arrow-heads of various types, as per SP: 46-2003 codes are acceptable. However, where space is too small for an arrowhead, oblique stroke or dot may be employed.
d)	In question no. 21 and in sectioned view of question no. 23, if hidden edges / lines are drawn, no marks should be deducted.
e)	Other standard methods of drawing / proportions for isometric scale, nuts, heads of bolts, screws etc. employed by examinees, may also be accepted.
f)	The answers/solutions must be evaluated adhering to marking scheme and no marks should be deducted without mistake.

Set 4

M.S. Code **P06846**

A

R

R

ò

oi T T

pi x

ri

si g h T

ti g h T T TT

ui g h T

vi T T T T T T T T

wi

xi x x

oni g h

ooi g h gh g h

opi g h

ori x

osi x x x x x x x x x

oti g h Tg hT Tg hT T T Tg hT T T T T Tg hm

oui g h T

ovi l T

owi

oxi

pni g h

poi g h R

gh T T T To° Tst°m

g h T T T TpoT kT T T T
p T T T

g h T T Tp p T T T T k
T T T

g h T n p p k

n T T T To kst

g h **R** **R R** **R**

gh T

g h T T T T T

T T mm

g h

g h T T g h T T T g h

g h

y *1* *1* *1 1* *1* *1 1*

ppi **R** **c** **d**

gh T g T T T T hkT T

g ° omuuu kT nwT T nuh q

g h T TgphT T TgphT T Tg T hk

TgphkT T

g h T T T T

g h T

R c R R d

gh T g T h T

g h T T T

g h T

y *1* *1* *1* *1* *1*

1 1 *1 1*

pri **R R R d**

gh **R R R R R**

l T T T T T T T

gqhk T T u g kT T T g T

T T g m r

l T T T T T T
gqhk T T u g kT T T T T T T T
vo g T T T g m
l T T T T T T T
m q
l T T T T pqT T g T T T
hT T T prum r
l T T T n
T T T m
g h **R R**
l T kT T poq g h
T pru g hm t
l T T T T T T m p
l T kT T kT T pqT T
T T omw T T T T pru g T
T T hm p
l T m

gphk gphk T gph
grhm

R R R R d

g h

gh **R R R**

l T T T T T T sTgq h
T T qwTphm r
l T T T T gqhk T T
T T T g hT T T m
l m

g h **R**

l T T T T T T T T sTgq hT
T T T T qwTgphm r
T T T T m q

l

g h **R**

gh **R R R R R**

l T T T gs st h
m q

l T T T k T T m

l T T T m

g h **R R**

l T m

l T T T T T T T T T
m

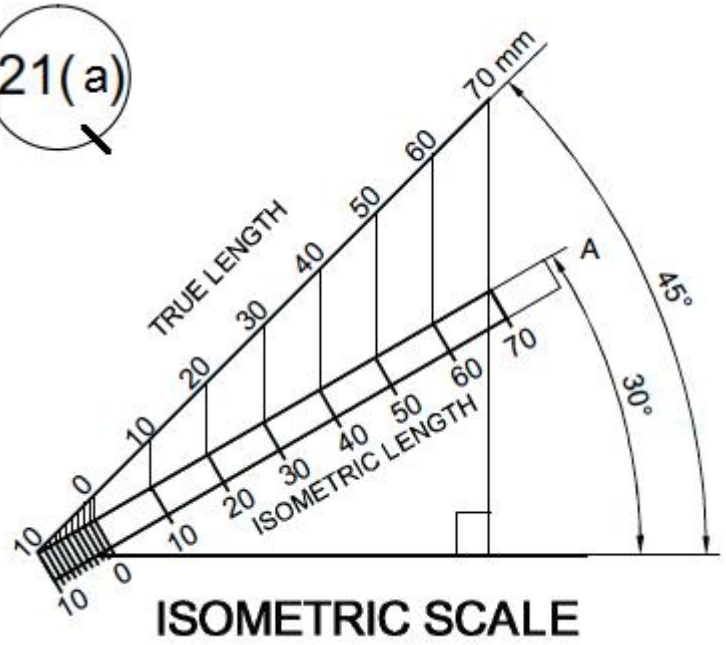
l T T T T m

l

gphkT gphk T T Tgphk
grhm

y *1* *1* *1* *1* *1* *1*
1

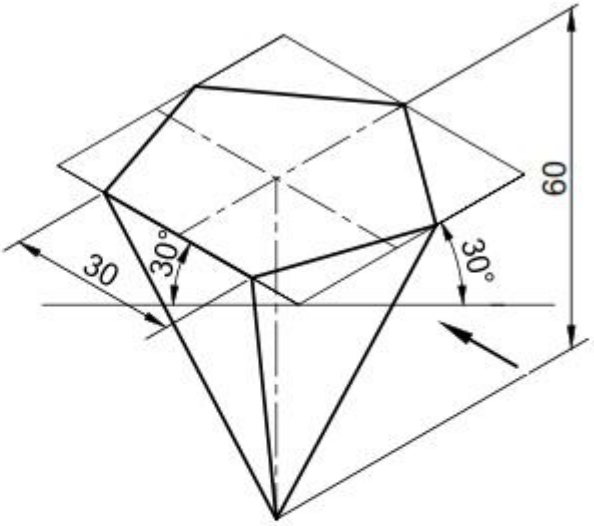
21(a)

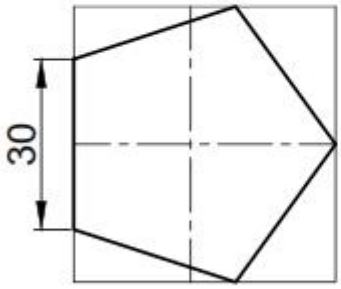


ISOMETRIC SCALE

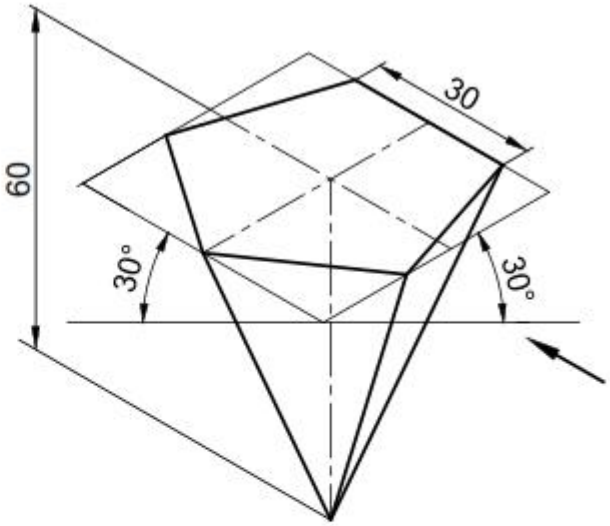
21(b)

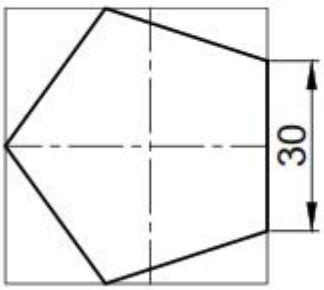
SOLUTION - 1





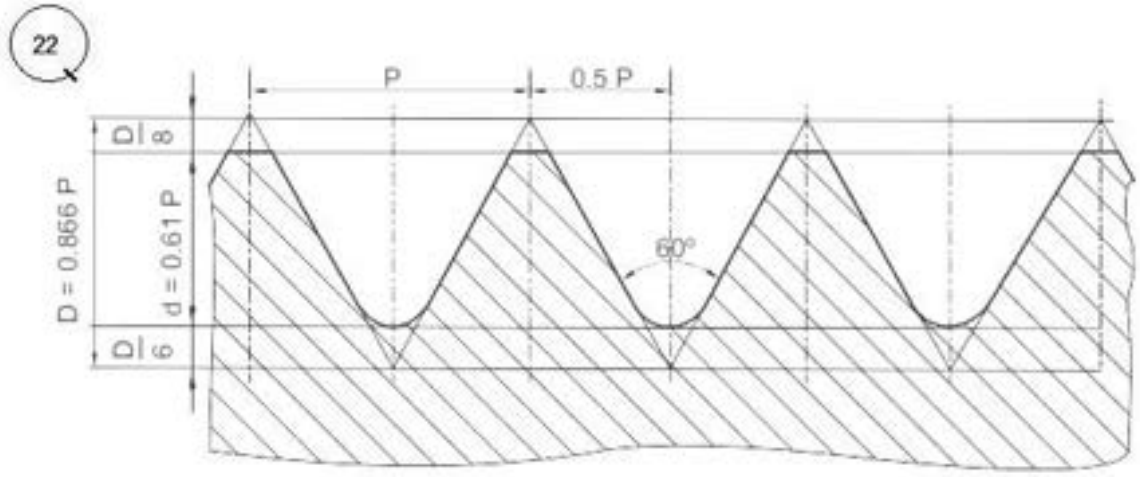
SOLUTION - 2





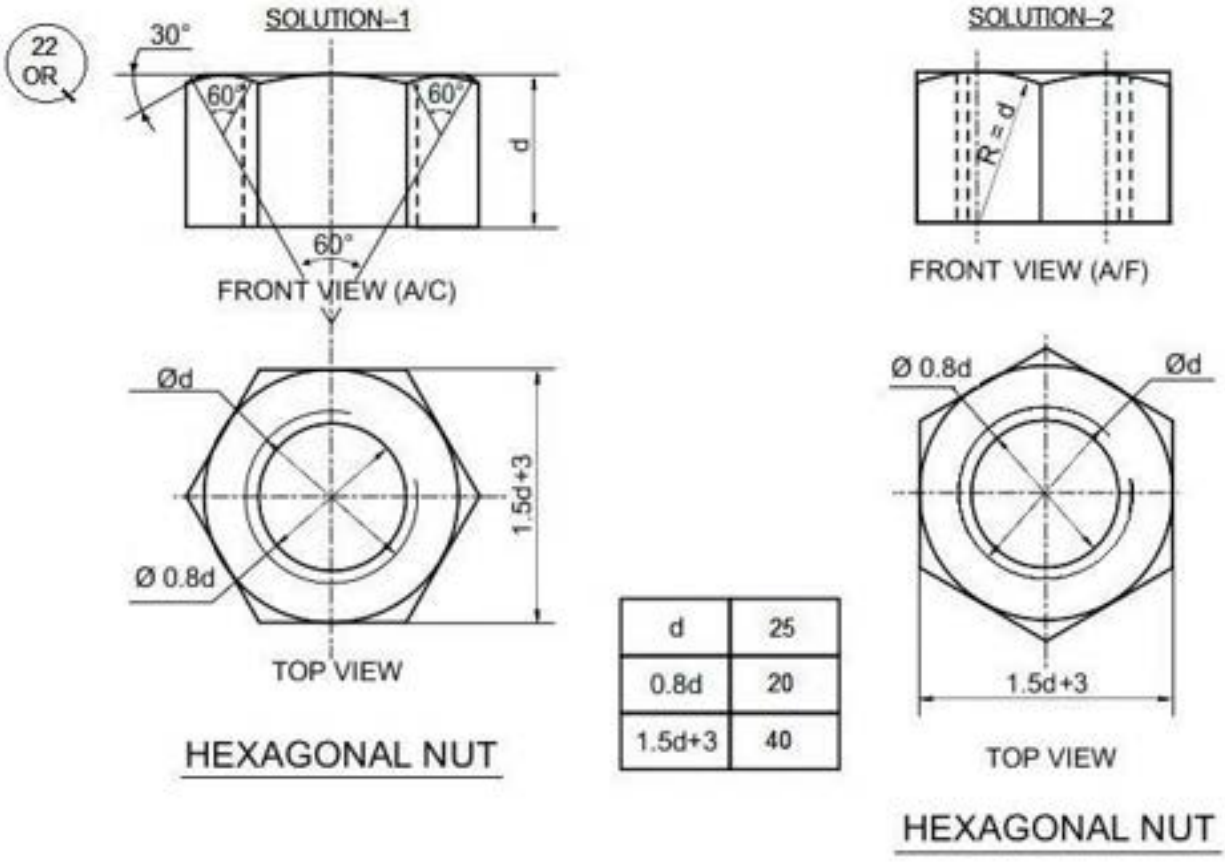
HELPING FIGURE

ISOMETRIC PROJECTION



P	0.86P	0.61P	D/6	D/8
40	34.6	24.4	6.7	5

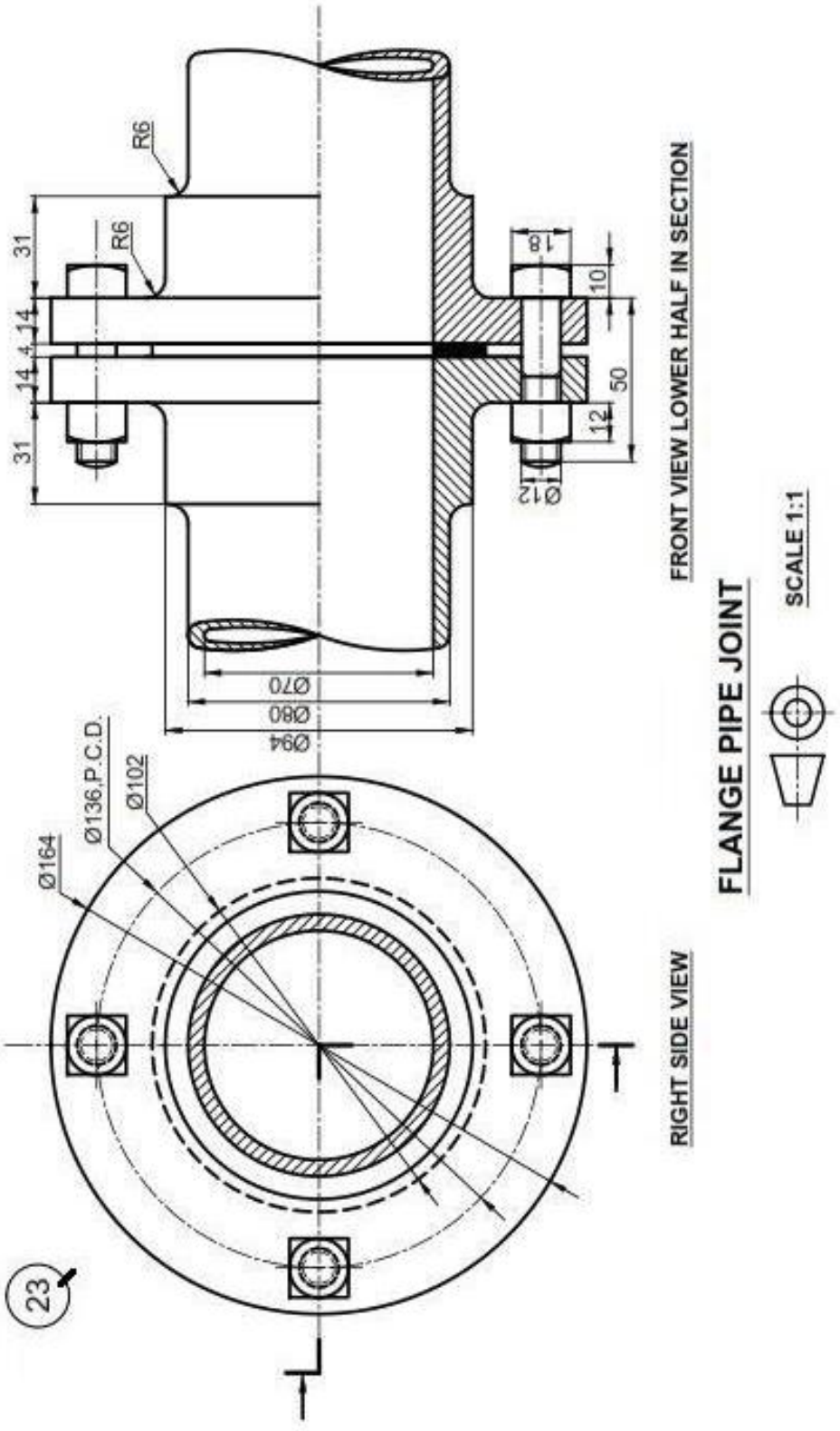
METRIC THREAD (EXTERNAL)

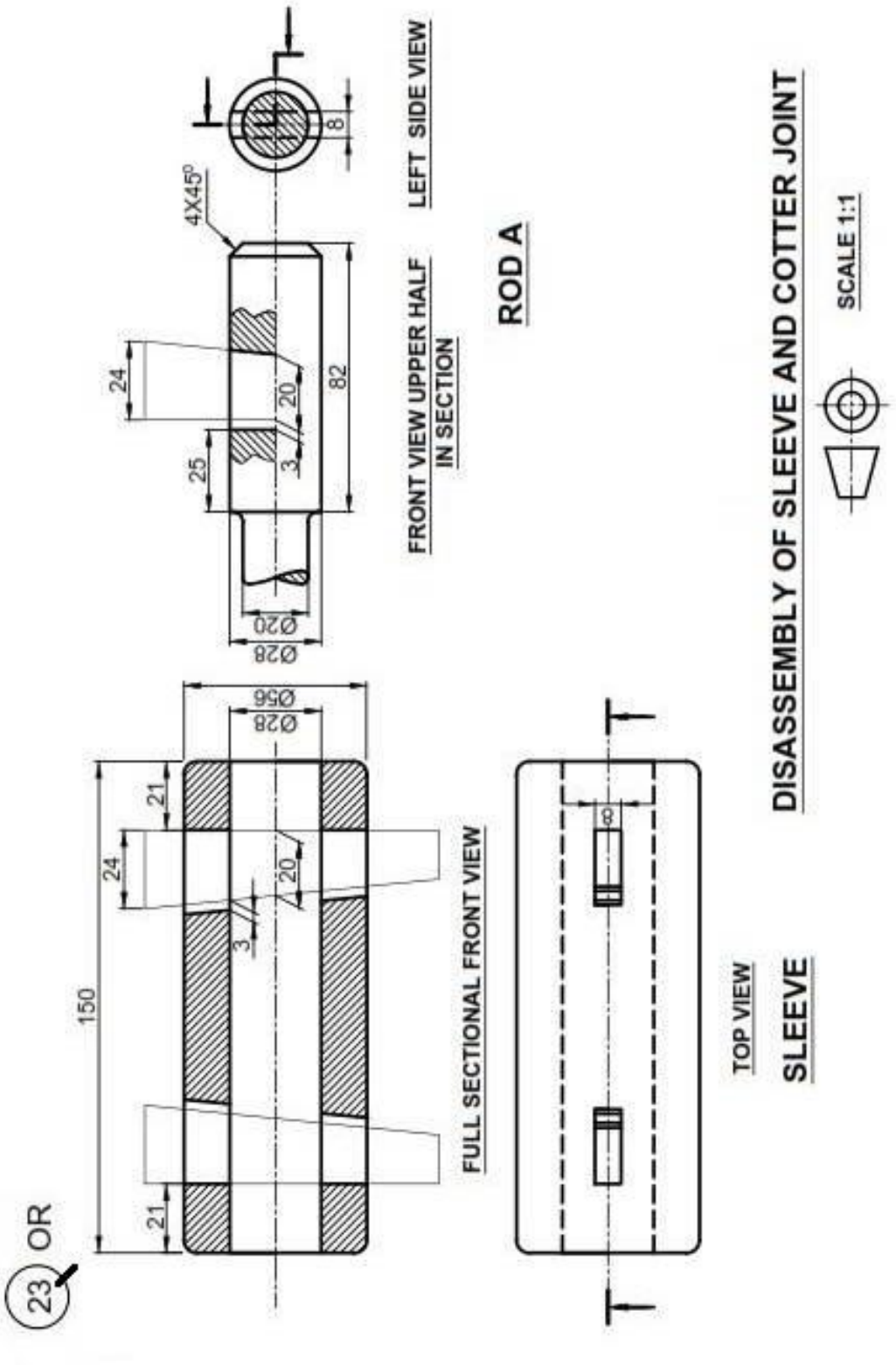


d	25
0.8d	20
1.5d+3	40

HEXAGONAL NUT

HEXAGONAL NUT


R6
R6
31
14
4
14
31
8
10
50
12
12
Ø94
Ø80
Ø70
Ø136.P.C.D.
Ø102
Ø164
23
FRONT VIEW LOWER HALF IN SECTION
RIGHT SIDE VIEW
FLANGE PIPE JOINT
SCALE 1:1


DISASSEMBLY OF SLEEVE AND COTTER JOINT
SCALE 1:1
ROD A
FRONT VIEW UPPER HALF IN SECTION
LEFT SIDE VIEW
4X45°
8
24
20
82
25
3
Ø20
Ø28
SLEEVE
TOP VIEW
FULL SECTIONAL FRONT VIEW
Ø56
Ø28
21
24
20
3
150
21
23
OR