MARKING SCHEME

<u>Senior School Certificate Examination – 2017</u>

Subject : ENGINEERING GRAPHICS

Sub Code : 046 Paper Code : 68

ALL QUESTIONS ARE TO BE ANSWERED CORRECTLY AND ACCURATELY.

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. 2 and in sectioned view of question no. 4, if hidden edges / lines are drawn, no marks should be deducted.
- e) Other standard methods of drawing / proportions for features like nuts, heads of bolts, screws etc. employed by examinees, may also be accepted.

VALUE POINTS

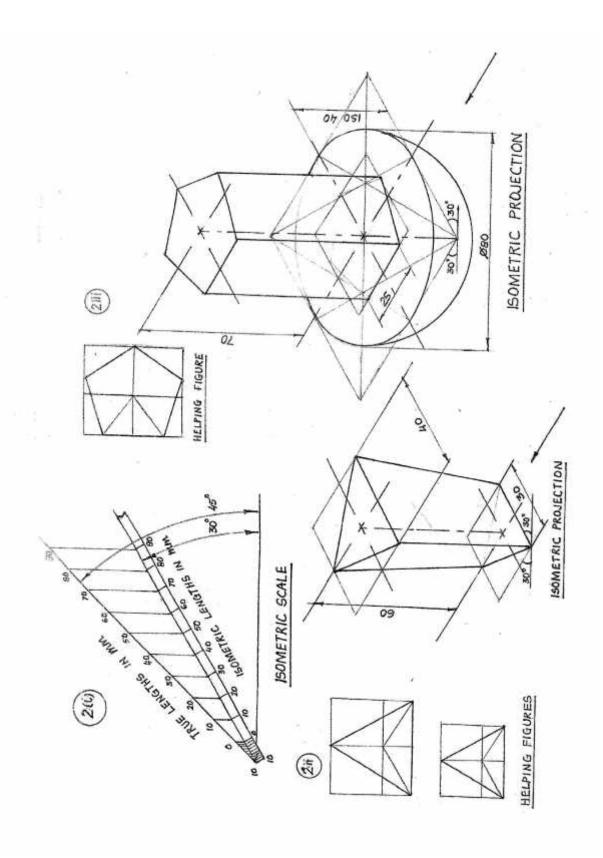
		<u>D</u>	<u>istribution</u>
			of Marks
Q 1.	MULTIP	LE CHOICE QUESTIONS	5
	(i)	(b) or Orthographic Projection.	1
	(ii)	(b) <i>or</i> J.	1
	(iii)	(d) <i>or</i> 3d.	1
	(iv)	(c) or To hold the jaws of the fork from opening wide when the cotter is inserted.	e 1
	(v)	(d) or A combination of pulleys and belt.	1
Q 2. (i)	ISOMET	RIC SCALE	4
	(i)	Marking of divisions of 10 mm, including division of first part of 1 mm on true length.	1
	(ii)	Projections from scale 1:1 to get points on isometric scale construction of isometric scale.	, 2
	(iii)	Printing 'True Length/Scale 1:1', 'Isometric Length/Isometric Scale' and marking angles of 30 ° & 45°.	1

(ii)		RIC PROJECTION OF A FRUSTUM OF A INVERTED TRIANGULAR	7		
	PYRAMI		111		
	(i)	Drawing helping figure of both triangles.	$1^{1}/_{2}$		
	(ii)	Drawing isometric triangle, on top and at the base.	2		
	(iii)	Drawing three slant edges.	$1^{1}/_{2}$		
	(iv)	Marking the vertical axis $\binom{1}{2}$ and direction of viewing $\binom{1}{2}$.	1		
	(v)	Dimensions.	1		
	NOTE: Fo	or incorrect position, 1 mark should be deducted.			
(iii)	ISOMET	RIC PROJECTION OF A PENTAGONAL PRISM PLACED, CENTRALLY,	13		
	ON A HE	MISPHERE			
		<u>HEMISPHERE</u>	6		
	(i)	Drawing isometric ellipse $(2^{1}/_{2})$ along with centre lines $(^{1}/_{2})$.	3		
	(ii)	Drawing semicircular portion of hemisphere.	$1^{1}/_{2}$		
	(iii)	Marking the vertical axis.	$^{1}/_{2}$		
	(iv)	Dimensions.	1		
		PENTAGONAL PRISM	7		
	(i)	Drawing helping figure.	1		
	(ii)	Drawing both isometric pentagons.	2		
	(iii)	Drawing vertical edges.	2		
	(iv)	Marking the vertical axis $\binom{1}{2}$ and direction of viewing $\binom{1}{2}$.	1		
	(v)	Dimensions.	1		
	NOTE : For incorrectly placed solids, deductions, as proposed in (ii) above, should be used.				
Q 3. (i)	KNUCKL	E THREAD PROFILE	8		
	(i)	Horizontal distances (equal to half of pitch), vertical distance	2		
		(0.5P) marked correctly.			
	(ii)	Semicircular profile for crests and roots of threads (minimum	3		
		two), drawn correctly.			
	(iii)	Drawing hatching lines.	1		
	(iv)	Standard dimensions.	2		
		[OR]			

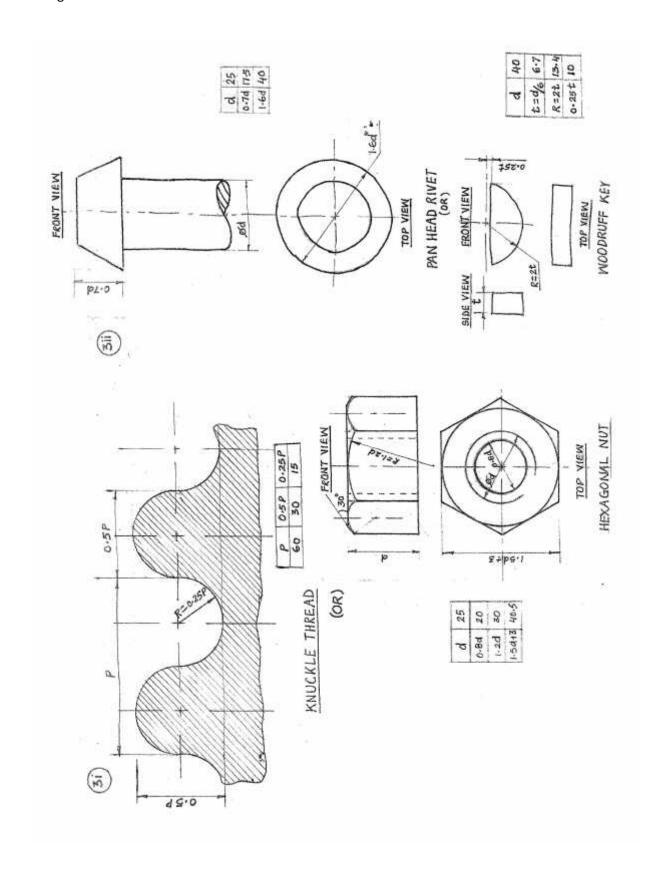
	HEXAGONAL NUT (with axis perpendicular to H.P.)			
		FRONT VIEW (A/C or A/F):		
	(i)	Boundary lines with chamfering and hidden lines showing threads with axis vertical and two opposite edges parallel to V.P.	2	
	(ii)	Drawing arcs with radius method or 60° angle method.	1	
		<u>TOP VIEW</u> :		
	(i)	Hexagon, circumscribing chamfer circle.	2	
	(ii)	Drawing three circles as per convention.	1	
		Standard dimensions.	2	
		marks should be deducted, in all, if sketched freehand, instead of dro to scale 1:1.	awing	
(ii)	PAN HEA	AD RIVET	5	
	(i)	Front view with its axis vertical.	$2^{1}/_{2}$	
	(ii)	Top view.	$1^{1}/_{2}$	
	(iii)	Standard dimensions.	1	
		[OR]		
	WOODR	UFF KEY	5	
	(i)	Front view.	2	
	(ii)	Top view.	1	
	(iii)	Side View.	1	
	(iv)	Standard dimensions.	1	
		mark should be deducted, if these components are drawn with instruments, instead of being sketched freehand.		
L	TURNBU	ICKLE (Assembly)		
. •	(i)	FRONT VIEW (Upper Half in Section) :	14	
	(a)	Drawing upper half portion of the body, with hatching lines.	5	
	(b)	Drawing lower half portion of the body.	4	
	(c)	Drawing both rods with 56 mm threaded portion inserted of	5	
	(-)	each, showing threads and hatching lines at the rod ends.		

Q 4.

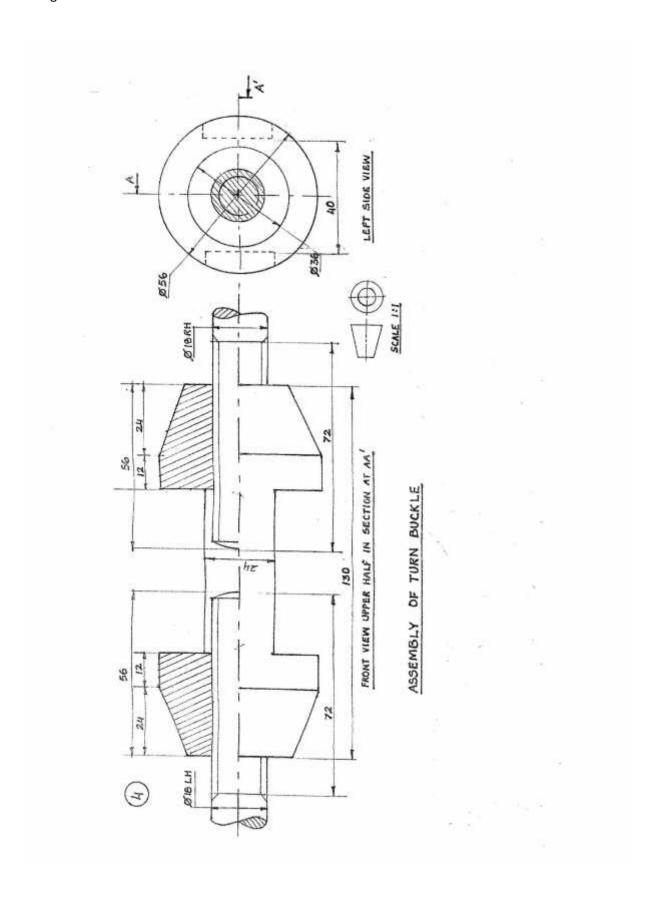
(ii (a (b (c	Drawing three circles along with conventional hatching lines. Drawing hidden lines.	$4^{1}/_{2}$ 3 $^{1}/_{2}$
<u>DETAILS</u> : Printing title (1), scale used (1), drawing projection symbol (1) and six dimensions (3).		
	[OR]	
UNPRO	DTECTED FLANGE COUPLING (Dis-assembly)	
(A) F	LANGE – B	
(i	FRONT VIEW (Upper Half in Section) :	8
(a	Drawing the upper, sectioned half of flange (2), with keyway (1).	3
(b		2
(c	-	2
(d	Hatching lines.	1
(ii	SIDE VIEW (looking from right) :	8
(a	Drawing four circles (4) and pitch circle for bolts $\binom{1}{2}$.	$4^{1}/_{2}$
(b	Drawing four circles of bolt hole of ø12 mm.	2
(c	Drawing keyway.	1
(d	Cutting plane.	1/2
(B) SQUARE BOLT		
(i	FRONT VIEW:	3
(a	Head.	$1^{1}/_{2}$
(b	Threaded and unthreaded portion of shank.	$1^{1}/_{2}$
(ii	<u>LEFT SIDE VIEW</u> :	3
(a	Square, hidden chamfer circle.	$1^{1}/_{2}$
(b	Drawing two circles as per convention.	$1^{1}/_{2}$
<u>DETAILS</u> :		
	Printing titles of both (1), scale used (1), drawing projection	_
	symbol (1) and six dimensions (3).	



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