SSCE Marking Scheme 2013

Code no. - 68/1

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MARKING SCHEME

Senior School Certificate Examination – 2013

Subject : ENGINEERING GRAPHICS

Sub Code : 046 Paper Code : 68 / 1

ALL QUESTIONS ARE TO BE ANSWERED CORRECTLY AND ACCURATELY.

General Note:

O NI-

- (i) Marks are to be awarded in proportion to the work done.
- (ii) Mistakes in dimensioning up to \pm 1.0 mm may be ignored.
- (iii) In dimensioning, arrow-heads of various types, as per SP: 46-2003 codes are usable. However, where space is too small for an arrowhead, oblique stroke or dot may be employed.
- (iv) In no view of question 1 and in no sectioned view of question 3, are hidden edges / lines required.
- (v) 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>5. 140.</u>	Distribution	<u>l</u>
	of Mark	<u>s</u>
Q 1.	ISOMETRIC SCALE	3
	(i) Marking of divisions of 10 mm, 1 mm on true length and marking angles of 30 ° & 45°.	1
	(ii) Projections from scale 1:1 to get points on isometric scale, Construction of isometric scale.	1
	(iii) Division of the first part of isometric scale into 10 subdivisions. Printing 'True Length/Scale 1:1' and 'Isometric Length/Isometric Scale'.	1
(a):	ISOMETRIC PROJECTION OF FRUSTUM OF A SQUARE PYRAMID	7
	(i) Drawing isometric square on top, of side 50 mm, with centre lines.	2
	(ii) Drawing isometric square, at the base, of side 60 mm, with centre lines.	1
	(iii) Drawing slant edges (three).	$1^{1}/_{2}$
	(iv) Marking the vertical axis, direction of viewing.	1
	(v) Dimensions.	$1^{1}/_{2}$

NOTE: For incorrect position of the frustum i.e. drawn in inverted position or if axis is kept horizontal, $1^1/_2$ marks should be deducted.

(b):		TRIC PROJECTION OF HEMISPHERE PLACED,	14
	CENTR	RALLY, ON A HEXAGONAL PRISM	7
	(i)	HEXAGONAL PRISM Drawing a helping figure of a hexagon, base edge = 30	1
	(1)	mm, with two of its base edges parallel to V.P.	'
	(ii)	Drawing isometric hexagons.	3
	(iii)	Drawing face edges, parallel to vertical axis.	2
	(iv)	Dimensions.	1
		HEMISPHERE	7
	(i)	Drawing isometric ellipse with centre lines.	3
	(ii)	Drawing semicircular portion of hemisphere	$1^{1}/_{2}$
	(iii)	Marking the common vertical axis and direction of viewing.	$1^{1}/_{2}$
	(iv)	Dimensions.	1
	NOTE:	For incorrectly placed solids, deductions as proposed in (a) may be used.	above,
Q 2. (a):	BSW T	HREAD PROFILE	8
	(i)	Distance, equal to pitch, marked correctly and angles of 55°, drawn correctly.	2
	(ii)	Curves for threads (minimum two), drawn correctly.	3
	(iii)	Side edges (flanks), drawn correctly.	1
	(iv)	Dimensions and hatching lines.	2
		[OR]	
	SINGL	E RIVETED LAP JOINT	8
	(i)	Drawing rivet with both heads.	3
	(ii)	Drawing both plates.	2
	(iii)	Drawing hatching lines.	1
	(iv)	Dimensions (at least four).	2

NOTE: BSW thread profile may be drawn either internal or external. 3 marks may be deducted, in all, if sketched freehand, instead of drawing to scale 1:1.

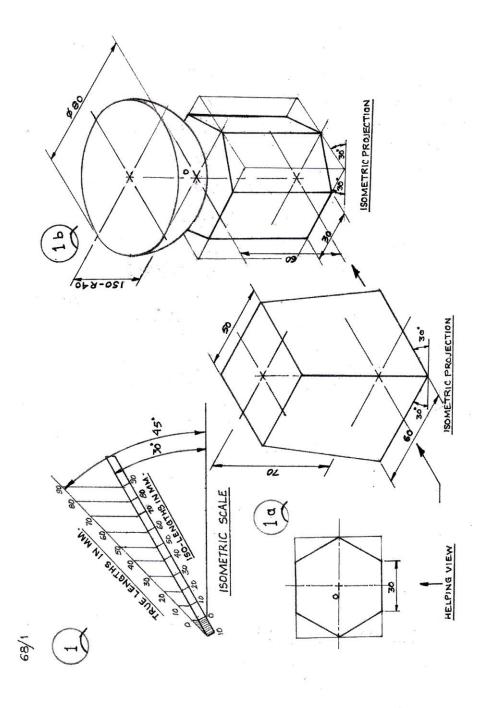
Q 2 (b):	<u>COLL</u>	AR STUD	5	
. ,	(i)	Front view with its axis horizontal.	$2^{1}/_{2}$	
	(ii)	Side view.	$1^{1}/_{2}$	
	(iii)	Dimensions.	1	
		[OR]		
	<u>GRUB</u>	SCREW	5	
	(i)	Front view with its axis vertical.	2	
	(ii)	Top view.	2	
	(iii)	Dimensions.	1	
	NOTE:	2 marks may be deducted, if these components are drawn		
		with instruments, instead of being sketched freehand.		
Q 3 :	SOCK	ET AND SPIGOT JOINT(Assembly)	28	
	(a)	FRONT VIEW (Upper Half in Section) :	14	
	(i)	Drawing upper half portion of socket and spigot	7	
	(-)	arrangement, clearance of 3 mm on both sides of cotter	·	
		and 5 mm clearance between inner walls of socket and		
		spigot arrangement.		
	(ii)	Drawing lower half portion, socket and spigot arrangement	3	
		including hatching lines in broken end of rods.		
	(iii)	Drawing cotter, upper half and lower portion out of socket.	2	
	(iv)	Hatching lines.	2	
	(b)	SIDE VIEW (viewed from left):	8	
	(i)	Drawing five circles.	5	
	(ii)	Drawing hatching lines to indicate the rod diameter.	1	
	(iii)	Drawing cotter.	$1^{1}/_{2}$	
	(iv)	Cutting plane.	¹ / ₂	
		<u>DETAILS</u> :	6	
		Printing title (1), scale used (1), drawing projection symbol		
		(1) and six dimensions (3).		

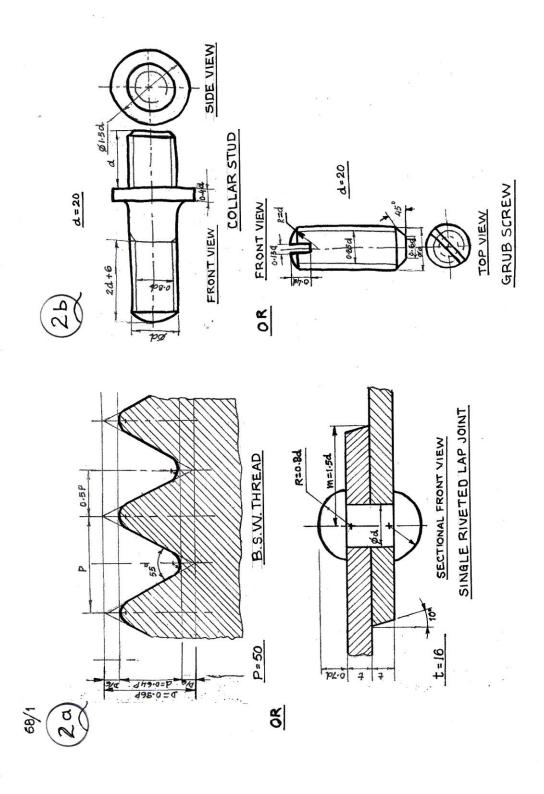
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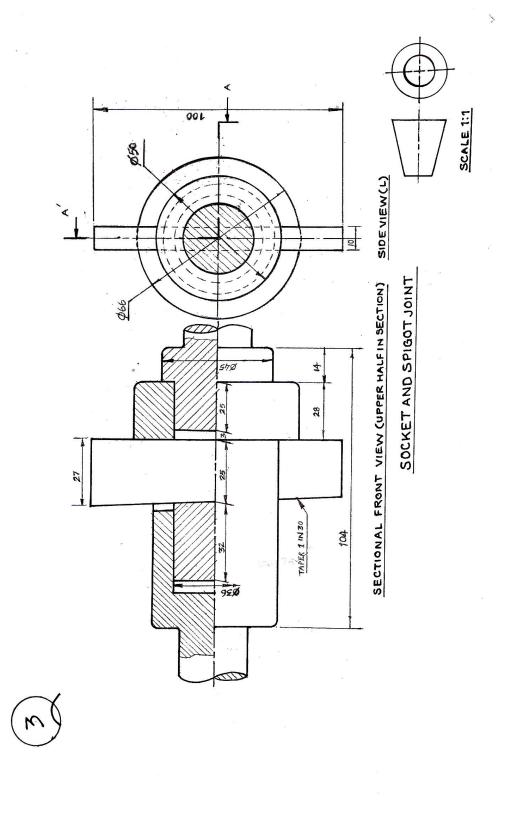
[OR]

	PROTE	ECTED FLANGE COUPLING (Dis-assembly)	28	
	(1) FI <i>A</i>	ANGE-A		
	` '	FRONT VIEW (Lower Half in Section) :	8	
	(i)	,	3	
	(ii)		2	
	(iii)		2	
		ø58 mm.		
	(iv)	Hatching lines.	1	
	(b)	SIDE VIEW (Viewed from left):	8	
	(i)	Drawing five circles (5) and pitch circle for bolts $\binom{1}{2}$.	$5^{1}/_{2}$	
	(ii)	Drawing keyway (1) and hole of ø10 mm(1).	2	
	(iii)	Drawing cutting plane.	¹ / ₂	
	(2) SH	AFT-A		
	(a)	FRONT VIEW:	3	
	(i)	Drawing the shaft with broken end.	2	
	(ii)	Drawing keyway.	1	
	(b)	SIDE VIEW (Viewed from right):	3	
	(i)	Drawing one circle.	2	
	(ii)	Drawing keyway.	1	
		<u>DETAILS</u> :	6	
		Printing titles of both (1), scale used (1), drawing		
		projection symbol (1) and six dimensions (3).		
Q4:	MULTIF	PLE CHOICE QUESTIONS		5
	(i)	(c) or 15 ⁰ .		1
	(ii)	(b) or 60°.		1
	(iii)	(c) or D/4.		1
	(iv)	(b) or Simple Plummer Block.		1
	(v)	(c) or 30° .		1





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