

Class XII
Engineering Graphics (046)
Marking Scheme 2018-19

Time allowed: 3 Hours

Max. Marks: 70

Section-A		
1	Multiple choice questions	
	(i) d OR Using the co-ordinates	1
	(ii) b OR Key	1
	(iii) a OR 55 ⁰	1
	(iv) d OR External thread	1
	(v) c OR Extension lines	1
2	(a) ISOMETRIC SCALE	
	(i) Marking of divisions of 10mm, including division of first part of 1mm 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 ⁰ and 45 ⁰	1
	(b) ISOMETRIC PROJECTION OF A SPHERE, PLACED CENTRALLY ON A HEXAGONAL PRISM	
	(i) Drawing Isometric squares	3
	(ii) Drawing slant edges	2
	(iii) Drawing the axis and direction of viewing	1
	(iv) Dimensions	1
	(c) ISOMETRIC PROJECTION OF A SPHERE, PLACED CENTRALLY ON A HEXAGONAL PRISM	
	SPHERE	
	(i) Locating the centre with isometric radius	1
	(ii) Drawing the circle with true radius	3
	(iii) Marking the vertical axis	1
	(iv) Dimensions	1
	HEXAGONAL PRISM	
	(i) Drawing helping figure	1
	(ii) Drawing isometric hexagons	2
	(iii) Drawing edges	2
	(iv) Marking axis ($\frac{1}{2}$) and direction of viewing ($\frac{1}{2}$)	1
	(v) Dimensions	1

3	(a) KNUCKLE THREAD PROFILE	3	
	(i) Distance, equal to pitch, marked correctly.	2	
	(ii) Semi-circular profile for threads (minimum two), drawn correctly	3	
	(iii) Dimensions and hatching lines		
	OR		
	<u>SQUARE NUT</u>		
<u>FRONT VIEW :</u>		2	
(i) Boundary lines with hidden lines showing threads with axis vertical and two opposite edges parallel to V.P.		1	
(ii) Drawing arc with radius R.			
<u>TOP VIEW :</u>		2	
(i) Drawing three circles as per convention.		1	
(ii) Square, circumscribing chamfer circle.			
<u>DETAILS :</u>		2	
Dimensions.			
(b) <u>PAN HEAD RIVET</u>			
(i) Front view with its axis vertical.		2½	
(ii) Top view.		1½	
(iii) Dimensions.		1	
OR			
<u>COLLAR STUD</u>			
(i) Front view with its axis horizontal.		2½	
(ii) Side view.		1½	
(iii) Dimensions.		1	
4	SOCKET AND SPIGOT COTTER JOINT (ASSEMBLY)		
	(i) FRONT VIEW, UPPER HALF IN SECTION	7	
	(a) Drawing the upper half portion of socket and spigot arrangement, clearance on both sides of cotter and 4mm clearance between inner walls	3	
	(b) Drawing the lower half portion of socket and spigot arrangement	2	
	(c) Drawing the cotter	2	
	(d) Drawing the hatching lines		
(ii) LEFT SIDE VIEW			
(a) Drawing 5 circles		5	
(b) Drawing the hatching lines		1	
(c) Drawing cotter		½	
(d) cutting Plane		½	

<p>DETAILS</p> <ul style="list-style-type: none"> (i) Titles (ii) Scale used (iii) Projection Symbol (iv) 6 important dimensions 	<p>1</p> <p>1</p> <p>1</p> <p>3</p>
OR	
<p>BUSHED BEARING (DISASSEMBLY)</p> <p>(i) BODY</p> <p>(a) FRONT VIEW, LEFT HALF IN SECTION</p> <ul style="list-style-type: none"> (a) Drawing the left half with hatching lines (b) Drawing the right half portion (c) Drawing hole ,circle (d) Drawing the oil hole and hatching lines <p>(b) SIDE VIEW</p> <ul style="list-style-type: none"> (a) Drawing the entire boundary with bush (b) Drawing holes and oil hole 	<p>3</p> <p>2</p> <p>2</p> <p>2</p> <p>5</p> <p>2</p>
<p>(ii) BUSH</p> <ul style="list-style-type: none"> (a) Side view in section (b) Front view with cutting plane <p>DETAILS</p> <ul style="list-style-type: none"> (i) Titles of both (ii) Scale used (iii) Projection Symbol (iv) 6 important dimensions 	<p>3</p> <p>3</p> <p>1</p> <p>1</p> <p>1</p> <p>3</p>
