MARKING SCHEME

SAMPLE QUESTION PAPER 2016-17

ENGINEERING GRAPHICS

ALL QUESTIONS ARE TO BE ANSWERED CORRECTLY AND ACCURATELY

VALUE POINTS

S.NO. Distribution of Marks

Q 1: Multiple Choice Questions **5**

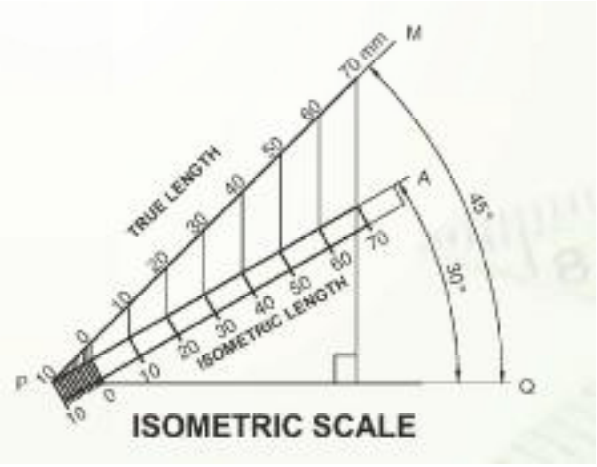
(i)	b or 15^o	1
(ii)	c or knuckle thread	1
(iii)	c or D/4	1
(iv)	a or flanged pipe joint	1
(v)	d or web	1

Q 2: (i) ISOMETRIC SCALE **4**

(i) Marking of divisions of 10mm, including division of first part of 1mm on true length 1

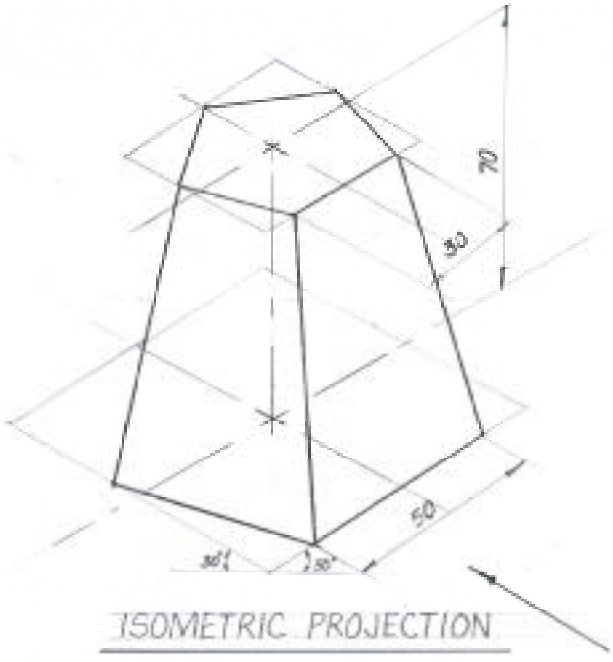
(ii) Projections from scale 1:1 to get points on isometric scale, construction of isometric scale 2

(iii) Printing 'True length / Scale 1:1', Isometric length / Isometric scale' and marking angles of 30^0 and 45^0 1



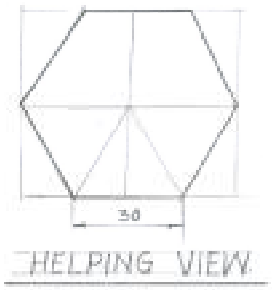
Q 2(ii): ISOMETRIC PROJECTION OF FRUSTUM **7**

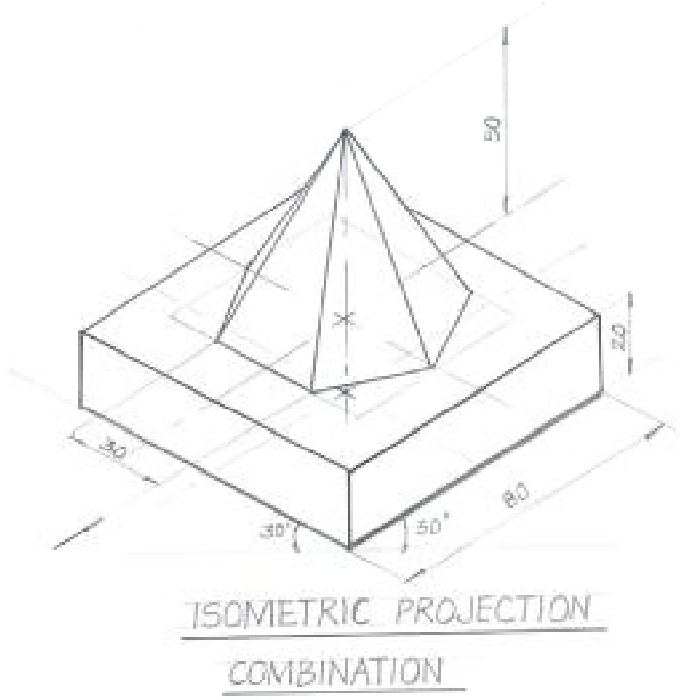
(i)	Drawing helping figure	1
(ii)	Drawing isometric pentagon on top and base	2
(iii)	Drawing the slant edges	2
(iv)	Marking the axis and direction of view	1
(v)	Two dimensions	1



Q 2(iii): ISOMETRIC PROJECTION OF COMBINATION OF SOLIDS 13

SQUARE SLAB	*6*
(i) Drawing isometric squares	3
(ii) Drawing edges	2
(iii) Dimensions	1
HEXAGONAL PYRAMID	*7*
(i) Drawing helping figure	1
(ii) Drawing isometric hexagon	2
(iii) Drawing slant edges	1
(iv) Dimensions	1
(v) Marking common axis (1) and direction of viewing (1)	2





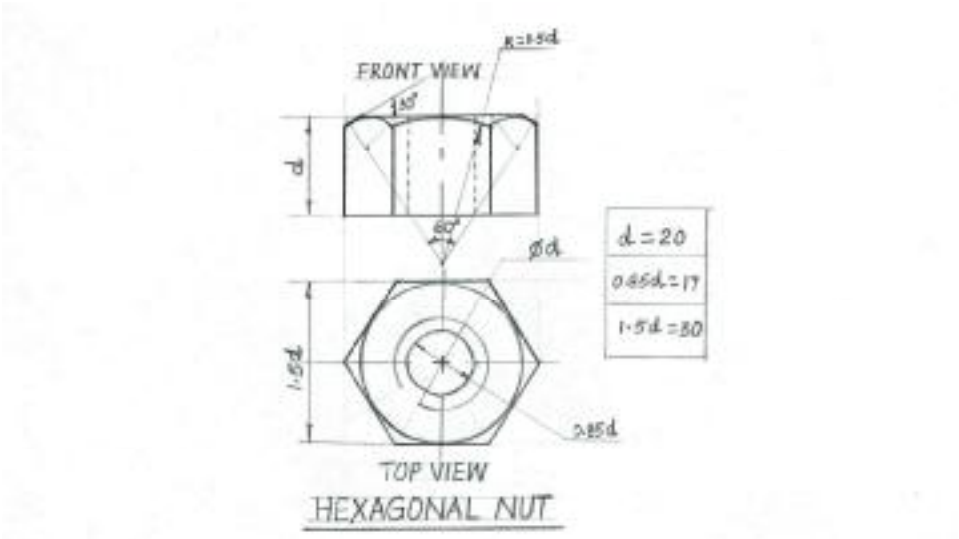
Q 3(i): HEXAGONAL NUT **8**

a) Front View 3
b) Side View 3
c) Standard Dimensions 2

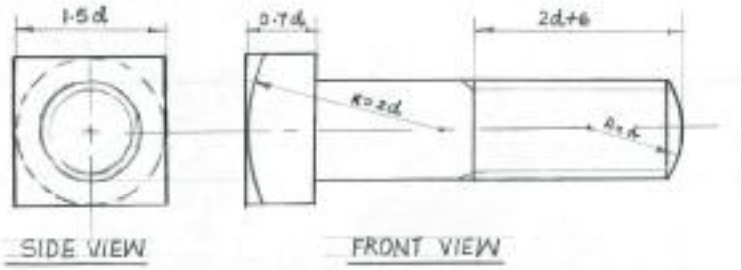
OR

SQUARE HEADED BOLT **8**

a) Front View 3
b) Side View 3
c) Standard Dimensions 2



HEXAGONAL NUT



SQUARE HEAD BOLT

d	2d	0.7d	1.5d	2d+6
20	40	14	30	46

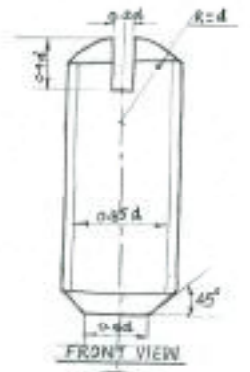
Q 3(ii): GRUB SCREW **5**

(i) Front view 2½
(ii) Top view 1½
(iii) Standard Dimensions 1

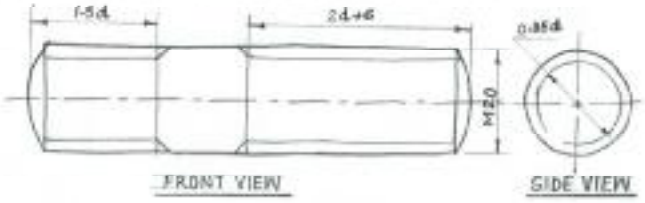
OR

PLAIN STUD **5**

(i) Front view 2½
(ii) Side view 1½
(iii) Standard Dimensions 1



GRUB SCREW



STUD

Q 4: FLANGE PIPE JOINT (ASSEMBLY) **28**

i) FRONT VIEW, TOP HALF IN SECTION **14**

(a) Drawing both flanges and pipes in top half portion, including fillets of R3 and hatching in the broken end of pipe. 4

(b) Drawing both flanges and pipes in bottom half (without hatching) including fillets of R3 and hatching in the broken end of pipe. 3

(c) Drawing a hole of dia 12 on a p.c.d. of dia 106 and hatching of flanges 2

(d) Drawing bolts and nuts of M10. 4

(e) Indicating gasket in the top half with shading or cross hatching and in bottom half. 1

(ii) LEFT SIDE VIEW **8**

(a) Drawing 5 circles and pitch circle for bolts. 4

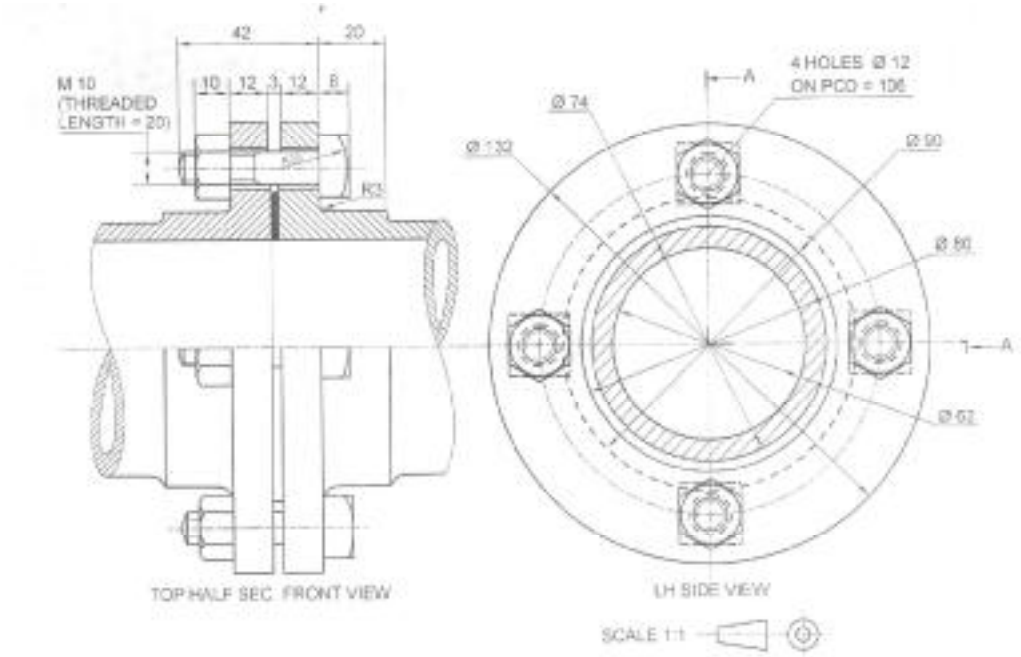
(b) Drawing hatching lines to indicate pipe thickness 1

(c) Drawing nut and bolt assembly on p.c.d. at one location at least 2½

(d) Drawing cutting plane ½

DETAILS **6**

Title (1), Scale used (1), Projection symbol (1), 6 important dimensions (3)



ASSEMBLY OF A FLANGED PIPE JOINT

OR

Q 3: PROTECTED FLANGE COUPLING (DISASSEMBLY) **28**

FLANGE B

(i) FRONT VIEW, UPPER HALF IN SECTION 8

(a) Drawing the upper half with hatching lines 3

(b) Drawing the lower half portion 2

(c) Drawing hole of φ8 mm and 3mm extended portion of φ40 mm 2

(d) Drawing the key way 1

(ii) LEFT SIDE VIEW 8

(a) Drawing six Circles and PCD 5½

(b) Drawing keyway (1) and hole of φ16 mm(1) 2

(c) Drawing cutting plane ½

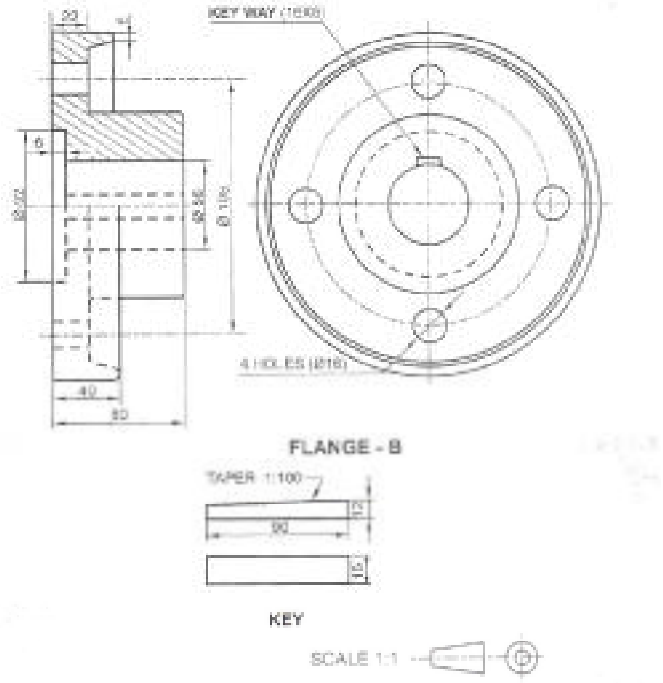
RECTANGULAR SUNK TAPER KEY 6

(i) Front view drawn correctly 3

(ii) Top view drawn correctly 3

DETAILS **6**

Title (1), Scale used (1), Projection symbol (1), 6 important dimensions (3)



A PROTECTED FLANGE COUPLING