



**UNIVERSITI TUN HUSSEIN ONN
MALAYSIA**

**PEPERIKSAAN AKHIR
SEMESTER 2
SESI 2008/2009**

NAMA MATA PELAJARAN : GRAFIK KEJURUTERAAN

KOD MATA PELAJARAN : BPC 1013

KURSUS : 1 BPB

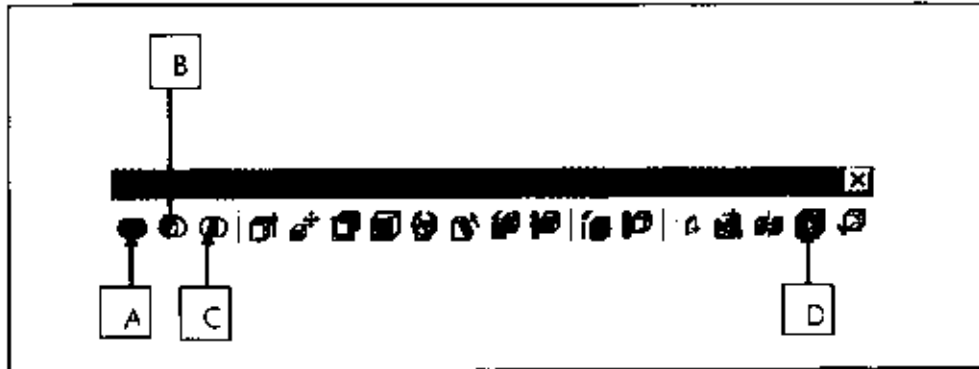
TARIKH PEPERIKSAAN : APRIL 2009

JANGKA MASA : 2 JAM

ARAHAN : JAWAB EMPAT (4) SOALAN SAHAJA
DARI ENAM (6) SOALAN.

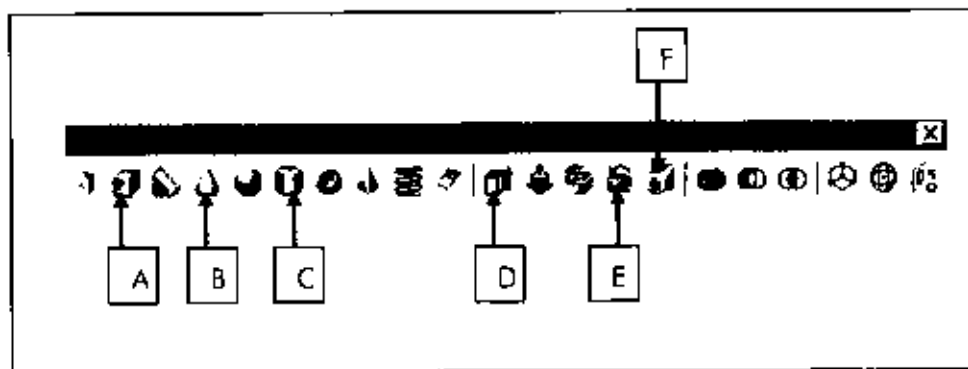
KERTAS SOALAN INI MENGANDUNGI 14 MUKA SURAT

- SI (a) Terangkan perbezaan antara lukisan 2D dan lukisan 3D. (4 markah)
- (b) Terangkan TIGA (3) arahan perantaraan pepejal *Boolean Operations* yang digunakan untuk melakukan sebarang pengubahsuaian model pepejal yang di bina. (6 markah)
- (c) Labelkan *Boolean Icon* yang bertanda A, B, C dan D yang terdapat pada rajah SI (c).

Rajah SI (c) : *Solid Editing*

(4 markah)

- (d) Labelkan *Modeling Icon* yang bertanda A, B, C, D, E dan F yang terdapat pada rajah SI (d).

Rajah SI (d): *Modeling*

(6 markah)

- Q1 (a) Explain the differences between 2D and 3D drawing. (4 marks)
- (b) Give **THREE (3)** instructions for solid Boolean Operations which is used for any modification on the solid model that has been built. (6 marks)
- (c) Label the Boolean Icon signed as A, B, C and D in Figure Q1 (c).

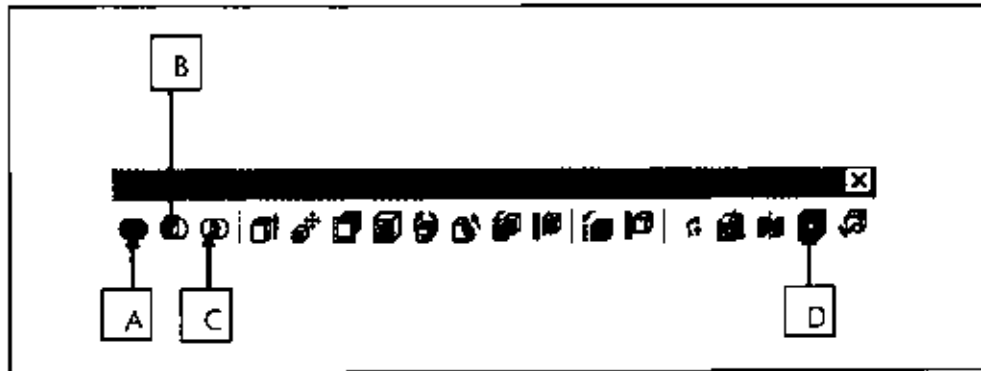


Figure Q1 (c) : Solid Editing

(4 marks)

- (d) Label the Modeling Icon signed as A, B, C, D, E and F in Figure Q1 (d).

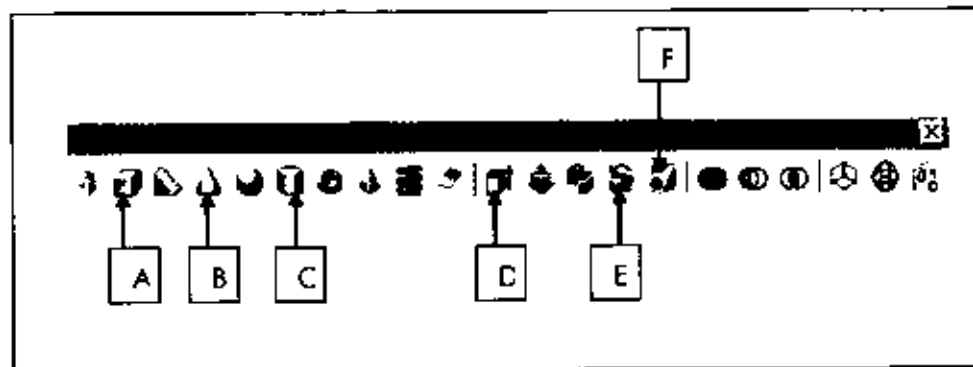
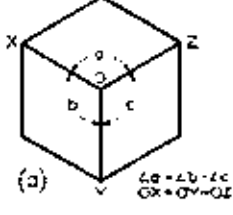
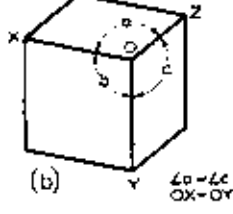
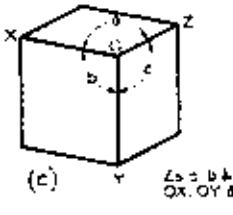




Figure Q1 (d) : Modeling

(6 marks)

S2 (a) Diberi kenyataan *geometric projection* seperti Jadual 1.

Jadual 1: Kenyataan *Geometric Projection*

A	 <p>(a) $L_0 = L_1 = L_2$ $OX = OY = OZ$</p>
B	 <p>(b) $L_0 = L_2$ $OX = OY$</p>
C	 <p>(c) $L_0 \neq L_1 \neq L_2$ $OX, OY \text{ \& } OZ \text{ UNEQUAL}$</p>
D	 <p>(d) $L_0 = L_1 = L_2$ $OX = OY = OZ$</p>
E	 <p>(e) $L_0 = L_1 = L_2$ $OX = OY = OZ$</p>

Padankan kenyataan *geometric projection* berikut dengan jawapan di Jadual 1:

- (i) *Cabinet oblique*
- (ii) *TRIsometric*
- (iii) *Cavalier oblique*
- (iv) *Isometric*
- (v) *Dimetric*

(5 markah)

- (b) Jelaskan kepentingan lukisan Isometrik. (4 markah)
- (c) Diberi kenyataan seperti Jadual 2.

Jadual 2: Penerangan bagi Arahan Tools

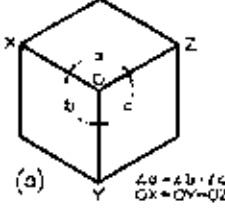
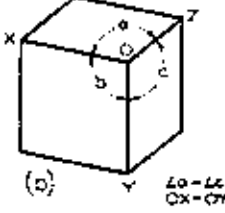
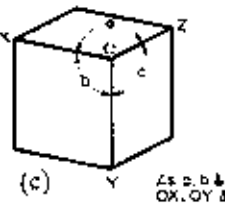


A	<i>Hold down the wheel button and drag the mouse</i>
B	<i>Scale object half</i>
C	<i>Rotate the wheel forward to zoom in, backward to zoom out</i>
D	<i>Set ortho ON or OFF</i>
E	<i>Cancel existing command</i>
F	<i>Double-click the wheel button</i>

Padankan pernyataan berikut dengan pernyataan di Jadual 2:

- (i) *Zoom in or out*
 (ii) *Zoom to drawing extents*
 (iii) *Pan*
 (iv) *Esc*
 (v) *F8 button* (5 markah)
- (d) Nyatakan **TIGA (3)** kebaikan lukisan 3D berbanding dengan lukisan 2D. (3 markah)
- (e) Nyatakan **TIGA (3)** kebaikan lukisan 2D berbanding dengan lukisan 3D. (3 markah)

Q2 (a) Given is geometric projection as Table 1.

Table 1: Geometric Projection Statements

A	 <p>(a) $\angle a = \angle b = \angle c$ $OX = OY = OZ$</p>
B	 <p>(b) $\angle a = \angle c$ $OX = OY$</p>
C	 <p>(c) $\angle a, \angle b, \angle c$ UNEQUAL OX, OY & OZ UNEQUAL</p>
D	
E	

Match the following geometric projection statements with answer in Table 1:

- (i) Cabinet oblique
- (ii) Trimetric
- (iii) Cavalier oblique
- (iv) Isometric
- (v) Dimetric

(5 marks)

(b) Explain the importance of Isometric drawing.

(4 marks)

(c) Statements are given in Table 2.

Table 2: Description of Tools Command

A	Hold down the wheel button and drag the mouse
B	Scale object half
C	Rotate the wheel forward to zoom in, backward to zoom out
D	Set ortho ON or OFF
E	Cancel existing command
F	Double-click the wheel button

Matching the following statements with statement in Table 2 :

- (i) Zoom in or out
- (ii) Zoom to drawing extents
- (iii) Pan
- (iv) Esc
- (v) F8 button

(5 marks)

(d) Give **THREE (3)** advantages of 3D drawing rather than 2D.

(3 marks)

(e) Give **THREE (3)** advantages of 2D drawing rather than 3D.

(3 marks)

S3 (a) Nyatakan kegunaan dan kepentingan *Command Window*.

(3 markah)

(b) Jelaskan fungsi dan kebaikan *Standard toolbar*.

(4 markah)

- (c)
- (i) Nyatakan jenis paksi yang terlibat dalam lukisan isometrik.
 - (ii) Nyatakan keperluan untuk melukis lukisan isometrik pada tiga paksi yang berlainan.





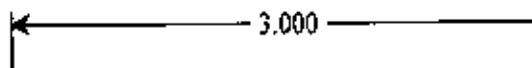
(5 markah)

- (d) Diberi senarai seperti Jadual 3.

Jadual 3: Penerangan bagi *Line Type*

A	<i>Continuous line</i>
B	<i>Center line</i>
C	<i>Hidden line</i>
D	<i>Dimension and extension line</i>
E	<i>Cutting plain line</i>

Padankan *Line type* berikut dengan senarai di Jadual 3.

- (i) 
- (ii) 
- (iii) 
- (iv) 
- (v) 

(5 markah)

- (e) Nyatakan dan lakarkan DUA (2) jenis simbol unjuran ortografik.

(3 markah)

- Q3 (a) State the usage and importance of Command Window.

(3 marks)

- (b) State the function and advantages of Standard toolbar.

(4 marks)

- (c) (i) Describe the type of axis which is involved in Isometric drawing.
 (ii) Describe the need of using Isometric drawing on three different axis.





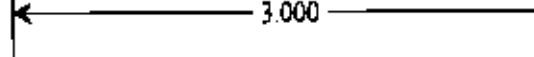
(5 marks)

- (d) The list given in the Table 3.

Table 3: Description of Line Type

A	Continuous line
B	Center line
C	Hidden line
D	Dimension and extension line
E	Cutting plain line

Matching the following **Line type** with the list in Table 3.

- (i) 
- (ii) 
- (iii) 
- (iv) 
- (v) 


(5 marks)

- (e) Describe and draw **TWO (2)** types of symbol used in orthographic layout.

(3 marks)

- S4 (a) Jelaskan **TIGA (3)** jenis penyuntingan yang terdapat dalam lukisan 2D AutoCAD. (6 markah)
- (b) Nyatakan kelebihan dan kekurangan CAD berbanding lukisan secara manual. (4 markah)
- (c) Diberi senarai seperti di Jadual 4.

Jadual 4: Simbol

A	%%p
B	%%d
C	
D	%%c
E	X






Padankan terma berikut dengan senarai di Jadual 4.

- (i) *Tangent*
- (ii) *Intersection*
- (iii) *Degress*
- (iv) *Plus / Minus*
- (v) *Diameter*

(5 markah)

- (d) Diberi simbol *Osnap* seperti di Jadual 5.

Jadual 5: Simbol *Osnap*

A	
B	
C	
D	
E	

Padankan terma *Osnap* berikut dengan simbol di Jadual 5:

- (i) *Midpoint*
- (ii) *Endpoint*
- (iii) *Node*
- (iv) *Quadrant*
- (v) *Center*

(5 markah)

- Q4 (a) Explain **THREE** (3) usages of editing which is used in the 2D and 3D drawings.


(6 marks)

- (b) Describe the advantages and disadvantages of CAD rather than hand drawn.

(4 marks)

- (c) List as given in Table 4.

Table 4: Symbols

A	%%p
B	%%d
C	
D	%%c
E	X






Match the following terms with the list in Table 4.

- (i) Tangent
- (ii) Intersection
- (iii) Degress
- (iv) Plus / Minus
- (v) Diameter

(5 marks)

(d) The Osnap symbol is listed as Table 5.

Table 5: Osnap symbol

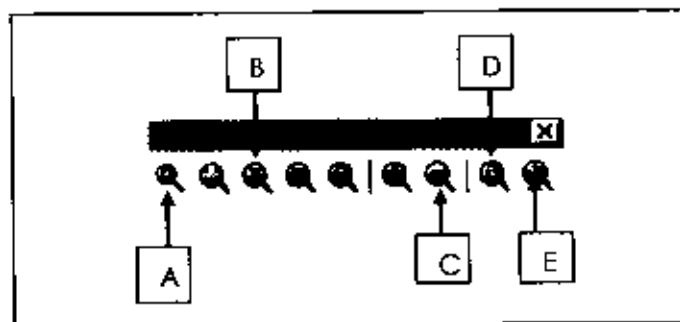
A	
B	
C	
D	
E	

Match the following Osnap terms with the symbols in Table 5.

- (i) Midpoint
- (ii) Endpoint
- (iii) Node
- (iv) Quadrant
- (v) Center

(5 marks)

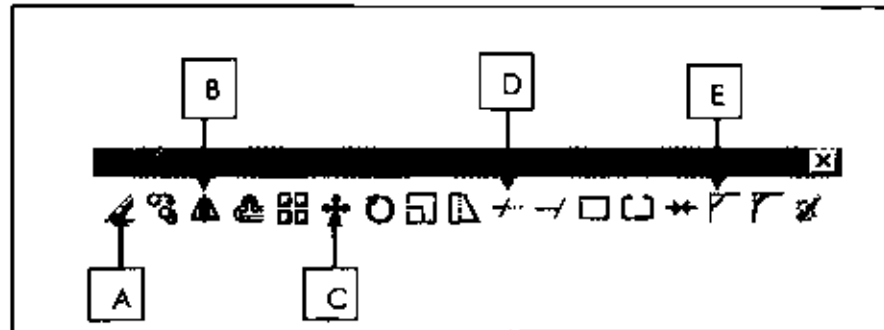
- S5 (a) Labelkan Zoom Icon yang bertanda A, B, C, D dan E yang terdapat pada Rajah S5 (a).



Rajah S5 (a): Zoom

(5 markah)

- (b) Nyatakan syarat-syarat utama bagi membolehkan arahan-arahan **Boolean** digunakan pada model pepejal. (2 markah)
- (c) Labelkan *Modify Icon* yang bertanda A, B, C, D dan E yang terdapat pada Rajah S5 (c).



Rajah S5 (c) : Modify

(5 markah)

- (d) Jelaskan **EMPAT (4)** jenis garisan yang terdapat dalam lukisan kejuruteraan serta kegunaannya. (8 markah)

Q5 (a) *Zoom Icon* signed as A, B, C, D and E in *Figure Q5 (a)*.

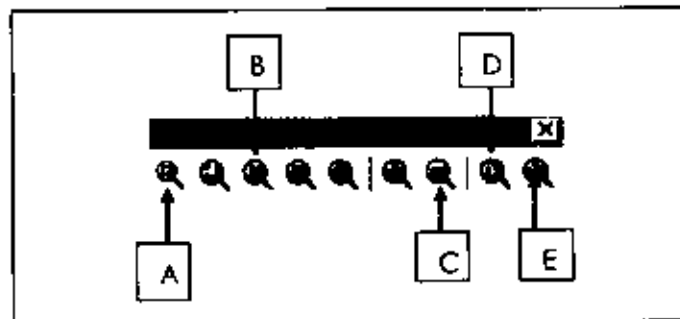


Figure Q5 (a): Zoom

(5 marks)

- (b) Describe the main rules to enable Boolean instruction to be used on a solid model. (2 marks)

- (c) Label the Modify Icon signed as A, B, C, D and E in Figure Q5 (c).

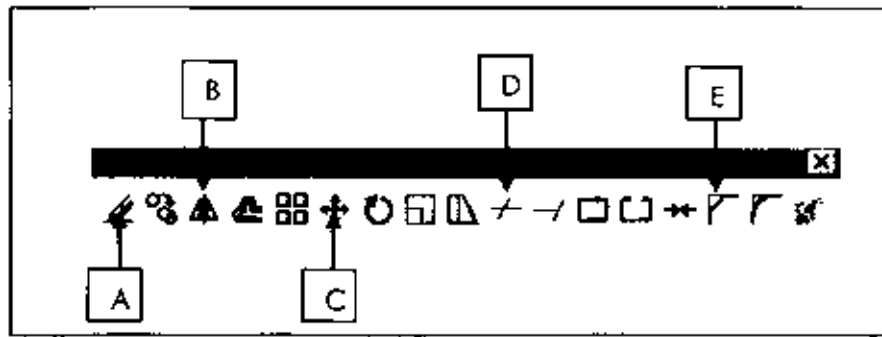


Figure Q5 (c) : Modify

(5 marks)

- (d) Describe **FOUR (4)** types of lines which are used in engineering drawing and its functions. (8 marks)
- S6 (a) Proses pendimensionian melibatkan penggunaan tiga jenis garisan. Jelaskan **TIGA(3)** jenis garisan tersebut serta kegunaannya. (6 markah)
- (b) Nyatakan **EMPAT (4)** maklumat piawaian yang perlu ada dalam sesuatu lukisan *Title block*. (8 markah)
- (c) Jelaskan **TIGA (3)** jenis kawasan bersempadan dalam lukisan ortografik. (6 markah)
- Q6 (a) Dimensioning process requires three types of lines. State **THREE (3)** types of the lines along with its functions. (6 marks)
- (b) State **FOUR (4)** standard information which are needed in a Title block drawing. (8 marks)
- (c) Explain **THREE (3)** types of boundary area in orthographic drawing. (6 marks)