



# **UNIVERSITI TUN HUSSEIN ONN MALAYSIA**

## **PEPERIKSAAN AKHIR SEMESTER II SESI 2009/2010**

**NAMA MATA PELAJARAN : TEKNOLOGI GRAFIK DAN  
ANIMASI 3D**

**KOD MATA PELAJARAN : BIT 3213**

**KURSUS : 3 BIT**

**TARIKH PEPERIKSAAN : APRIL/MEI 2010**

**JANGKA MASA : 2 JAM 30 MINIT**

**ARAHAN : JAWAB SEMUA SOALAN**

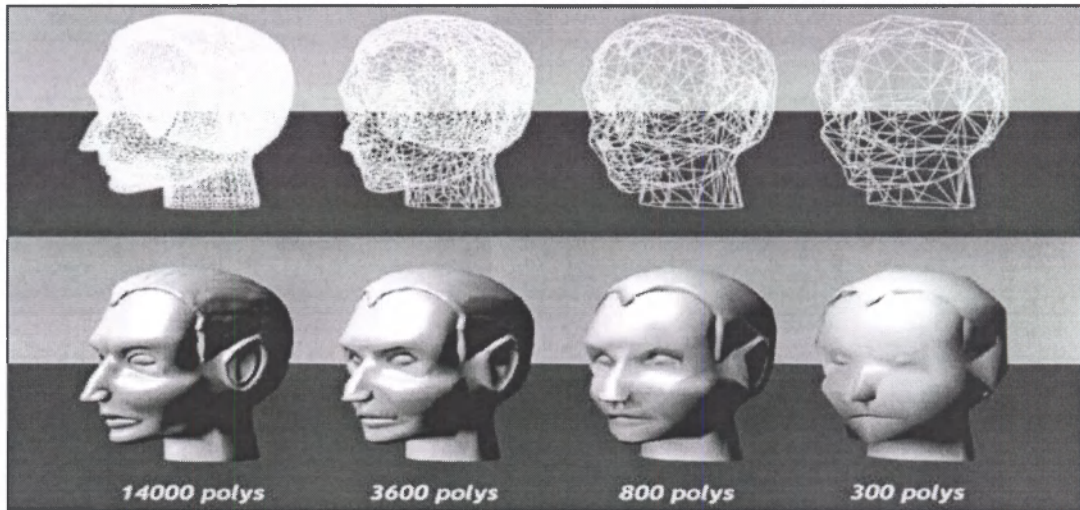
Instruction: Answer **ALL** questions.

**Q1** (a) Explain the definition of 3D animation. (5 marks)

(b) Suggest **THREE (3)** best methods to adapt the 3D animation area and give **TWO (2)** rational to support your method above.

(5 marks)

**Q2** Given the following **FIGURE Q2**:



**FIGURE Q2: LOD in low poly modelling**

Explain *Level of Details (LOD)*.

(12 marks)

**Q3** Discuss **FIVE (5)** basic skills for 3D animator.

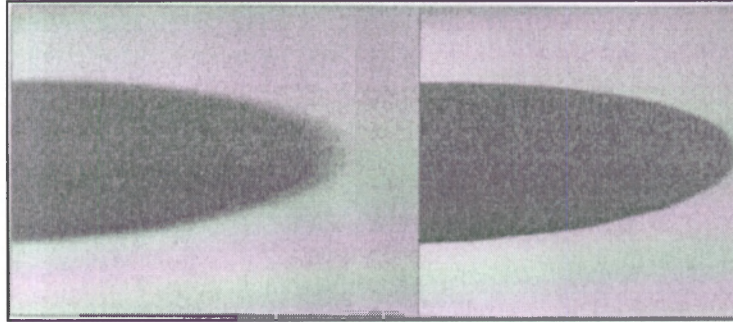
(10 marks)

**Q4** (a) Discuss *mesh tessellation and optimization* techniques and give **ONE (1)** example for each technique.

(10 marks)

- (b) Explain **THREE(3)** *lathe* method in animation 3D using appropriate diagram. (10 marks)

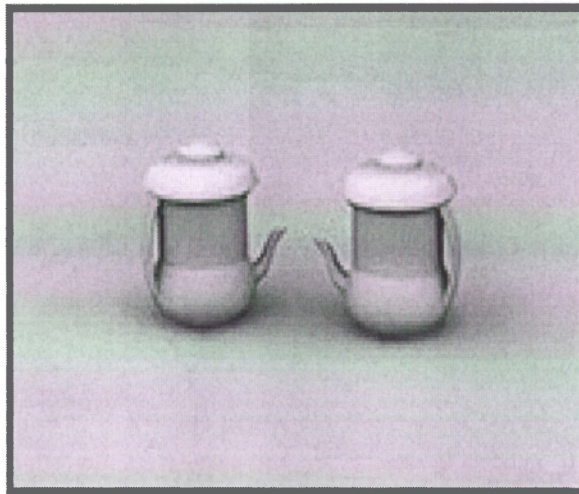
**Q5** Given the following **FIGURE Q5:**



**Figure Q5: *Shadow Mapped* and *Ray Traced***

Explain what is *Shadow Mapped* and *Ray Traced* using in 3D animation lighting. (15 marks)

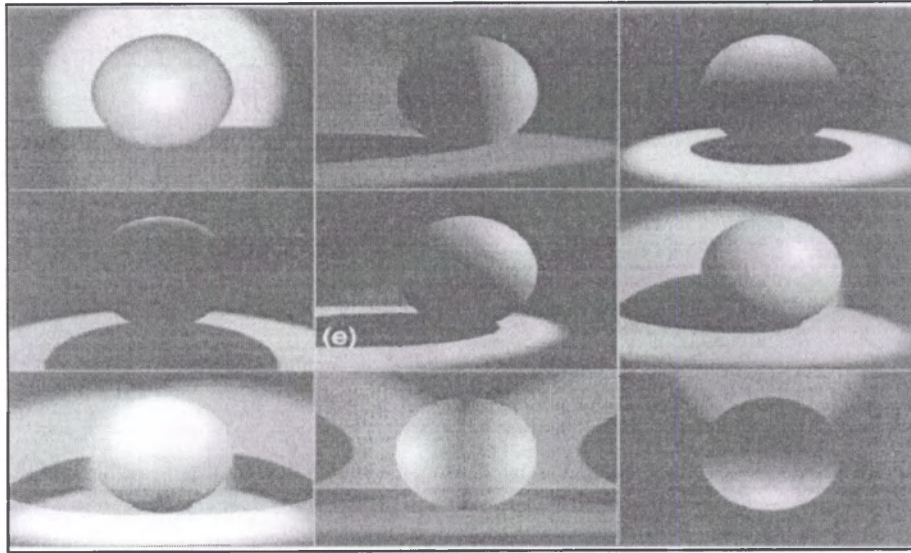
**Q6** Given the following **FIGURE Q6:**



**FIGURE Q6: 3D Model (Teapot)**

Construct 3D modeling using the model below. Show steps in diagram and explain modeling techniques that you use to construct this model. (15 marks)

**Q7** Given the following **FIGURE Q7**:



**FIGURE Q7: Lighting Arrangement**

Discuss the lighting strategies in 3D animation.

(19 marks)

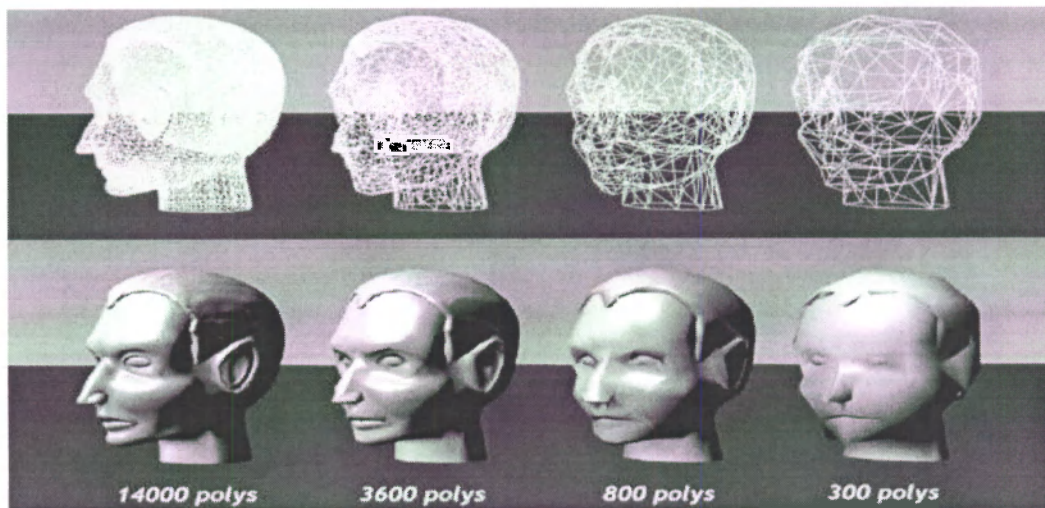
Arahan : Jawab **SEMUA** soalan

**S1** (a) Terangkan secara ringkas definisi animasi 3D. (5 markah)

(b) Cadangkan **TIGA (3)** kaedah yang anda fikirkan adalah terbaik untuk menguasai bidang animasi 3D dan berikan **DUA (2)** rasionalnya.

(5 markah)

**S2** Berdasarkan **RAJAH S2**, huraikan maksud *Level of Details (LOD)* yang digunakan di dalam permodelan *low-poly*.



**RAJAH S2 : Level of Detail dalam permodelan low poly**

(12 markah)

**S3** Bidang animasi 3D memerlukan minat dan disiplin tinggi di samping kreativiti serta kemahiran teknikal. Berikan **LIMA (5)** keperluan asas seorang juruanimasi 3D.

(10 markah)

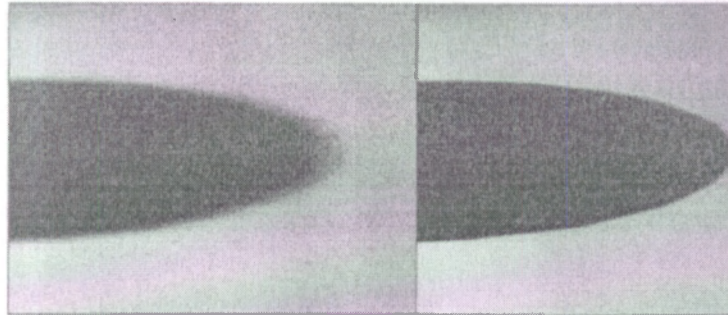
**S4** (a) Jelaskan maksud *mesh tessellation and optimization* dan tunjukkan contoh dalam bentuk gambarajah.

(10 markah)

- (b) Huraikan **TIGA (3)** jenis *lathe* dan tunjukkan contoh dalam bentuk gambarajah.

(10 markah)

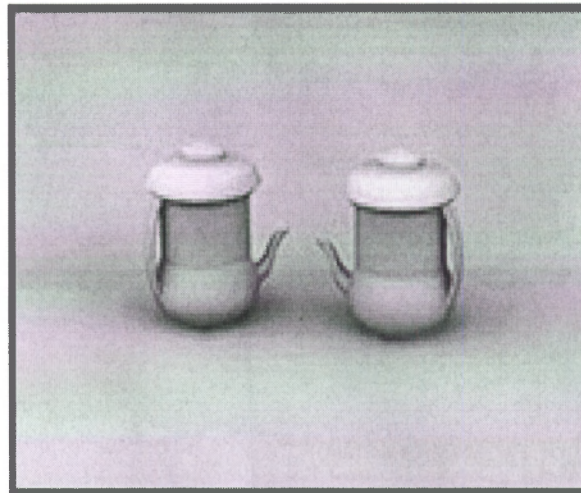
- S5 Berdasarkan **RAJAH S5**, huraikan maksud *Shadow Mapped* dan *Ray Traced* yang digunakan di dalam pencahayaan.



**RAJAH S5 : Kesan *Shadow Mapped* dan *Ray Traced***

(15 markah)

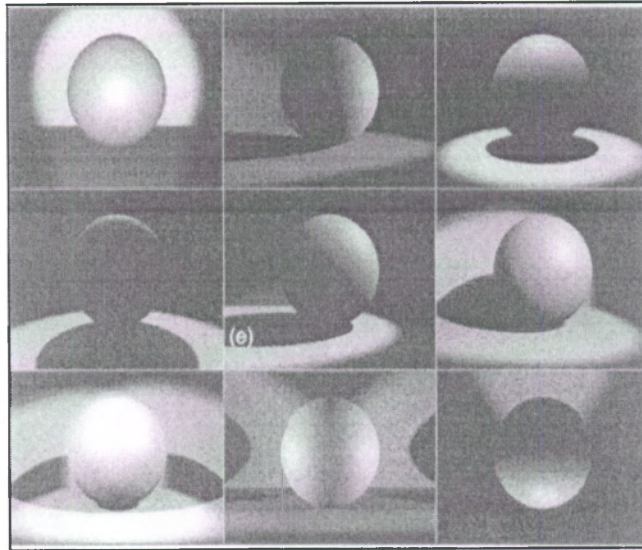
- S6 Berdasarkan **RAJAH S6**, hasilkan model 3D berdasarkan model cawan di bawah. Tunjukkan langkah-langkah dalam bentuk lakaran dan nyatakan teknik pemodelan 3D yang digunakan untuk setiap langkah yang terlibat.



**RAJAH S6 : Model 3D Cawan**

(15 markah)

- S7 Berdasarkan **RAJAH S7**, huraikan strategi pencahayaan yang di gunakan di dalam animasi 3D.



**RAJAH S7 : Susunatur Pencahayaan**

(19 markah)