

JIS College of Engineering
B. Tech (Information Technology)-5th Semester
Computer Graphics Assignment

Paper Code: IT-505C

Assignment ID: **Soham/OSem/2015/IT505C/0007**

Computer Graphics is no separate from Mathematics!



- Assume a **Bézier** curve to be cubic unless otherwise stated
- * implies important due to the Question was set for an exam
 - 3) University of Madras
 - 4) University of Orlando (UCF)

1. Find the equation of the **Bézier** curve interpolating the points **(0,0)** and **(-2,1)** and controlled by the points **(7,5)** and **(2,0)**.

→Tally your Answer: [$(13t^3 - 36t^2 + 21t)$ $(16t^3 - 30t^2 + 15t)$]

2. Find the coordinates of the points at $t=0.2, 0.4$ of a **Bézier** curve interpolating the points **(40,40)** and **(60,0)** and controlled by the points **(10,40)** and **(60,60)**.

→Tally your Answer: **(30.56, 41.6)** $t=0.2$

3. * A **Bézier** curve segment is described by the control points **(20,20)**, **(40,80)**, **(80,80)** and **(90,50)**. Another curve segment, described by the control the points $Q_1(a,b)$, $Q_2(c, 20)$, $Q_3(150,20)$ and $Q_4(180,20)$. Find the values of the unknowns the two curve is to be joined smoothly.

→Tally your Answer: **a=90, b=50, c=100**

4. * A **Bézier** curve segment is described by the control points **(2,1)**, **(3,2)**, **(5,0)** and **(6,2)**. Choose another set of control points to draw another curve that smoothly joins the former.

→Tally your Answer: **(6,2), (7,4), (7, 10), (any,any)]**