

Name:	
Enrolment No:	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, December 2018

Programme Name: BTech. (CSE spl. GG)

Semester: V

Course Name : Web Programming for Graphics and Gaming (HTML5 and WebGL)

Time : 03 hrs

Course Code : CSEG338

Max. Marks: 100

Nos. of page(s) : 2

Instructions: Wherever required write clear and well formatted code, and webpage only in HTML5

SECTION A

S. No.	Question	Marks	CO
Q 1	Write in very brief about below HTML5 events (5-10 words each) i) onabort ii) ondblclick iii) onerror iv) onforminput	4	CO2
Q2	How 'script' tag is provided in HTML5 and HTML4?	4	CO2
Q3	Write the sample code for using below input types in HTML5 i) week ii) email	4	CO1
Q4	What is 'required' attribute introduced in HTML5? Write example code with output?	4	CO1
Q5	Write about the following on the context of OpenGL ESSL i) uniform ii) varying	4	CO3

SECTION B

Q6	Write separate SVG code for drawing a. Cyan color Rectangle b. Magenta color Ellipse c. Yellow color Circle d. Red Color Polygon with 6 vertex	10	CO2
Q7	Write the three methods for drawing rectangle in canvas with code and output?	10	CO2
Q8	How below operators/methods work in GLSL? i) * ii) / iii) dot() iv) cross()	10	CO3
Q9	What is Vertex Shader and Fragment Shader in WebGL? Write a small example code for them?	10	CO3

	OR		
	Write the JS WebGL code for i) Vertex data having vertex position for 3D equilateral triangle ii) drawArray call for displaying equilateral triangle		
SECTION-C			
Q10	Write the methods for creating transformation matrices for i) translation by 'X', 'Y' and 'Z' units. With 'X', 'Y' and 'Z' provided as the argument to the method ii) scaling by 'Sx', 'Sy' and 'Sz' units. With 'Sx', 'Sy' and 'Sz' provided as the argument to the method Also write corresponding Vertex Shader code for both. OR Draw different shapes that can be produced with any five different modes provided to gl.drawArrays() API call. Use the same five points for displaying different shapes.	20	CO4, CO5
Q11	State all the steps required for displaying a red colored triangle in a web browser using WebGL	20	CO3, CO4, CO5

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SECTION A

S. No.		Marks	CO
Q1	Write in very brief about below HTML5 events (5-10 words each) ii) onfocus ii) oninput iii) onload iv) onkeyup	4	CO1
Q2	Write the HTML5 code for specifying DOCTYPE?	4	CO2
Q3	Write the sample code for using below input types in HTML5 ii) range ii) number	4	CO1
Q4	What is 'placeholder' attribute introduced in HTML5? Write example code with output?	4	CO1
Q5	Write about the following on the context of OpenGL ESSL i) attributes ii) varying	4	CO3

SECTION B

Q6	Write separate SVG code for drawing e. Yellow color Rectangle f. Cyan color Ellipse g. Magenta color Circle h. Red Color Polygon with 6 vertex	10	CO2
Q7	Write the code for 'arc' method of canvas for drawing an arc with angle between [0 270] degree.	10	CO2
Q8	What are the shaders in WebGL? Write a small example code for them.	10	CO3

OR

	What are the steps required for loading a textured image in WebGL? Note: Shader and other steps are not required		
Q9	Write the vertex and fragment shader code only for displaying a 512*512 texture image over a plane created with two gl.TRIANGLES argument?	10	CO3
SECTION-C			
Q10	Write the methods for creating transformation matrices for iii) Rotation by 'θx', 'θy' and 'θz' angle. With 'θx', 'θy' and 'θz' provided as the argument to the method iv) Scaling by 'Sx', 'Sy' and 'Sz' units. With 'Sx', 'Sy' and 'Sz' provided as the argument to the method Also write corresponding Vertex Shader code for both. OR Draw neatly the WebGL's rendering pipeline.	20	CO3, CO4
Q11	Write all the steps required for displaying a red colored triangle in a web browser using WebGL	20	CO3, CO4, CO5