



**Sir Syed University of Engineering & Technology**  
**Faculty of Computing and Applied Sciences**  
**Department of CS/SE**

**Final Examination Winter Session 2020-21**

Course Code with Title	CS - 323: Computer Graphics & Multimedia SWE- 408: Computer Graphics		Program	BS (CS / SE)
Instructor	Engr. Syed Atir Iftikhar		Semester	5 <sup>th</sup> , 6 <sup>th</sup>
Start date & Time	Jan 27 <sup>th</sup> , 2021 at 6:00 PM	Submission Deadline	Jan 27 <sup>th</sup> , 2021 at 11:00 PM	
Maximum Marks	50			
Students must meet their submission deadline as there is no re-take or re-attempt after the deadline.				

**IMPORTANT INSTRUCTIONS:**

**Read the following Instructions carefully:**

- All Questions carries equal marks
- Attempt All Questions on MS- Word. Font theme and size must be Times New Roman and 12 points respectively. Use line spacing 1.5.
- You may provide answers HANDWRITTEN. The scanned solution must be submitted in PDF file format (Use any suitable Mobile Application for Scanning)
- For Diagrams, you can use paper and share a clear visible snapshot in the same Answer Sheet.
- Arrange questions and their subsequent parts in sequence.
- Make sure that your answers are not plagiarized or copied from any other sources. In case of plagiarism, **ZERO** marks will be awarded.
- Provide relevant, original and conceptual answers, as this exam aims to test your ability to examine, explain, modify or develop concepts discussed during the course.
- Recheck your answer before the submission on **VLE** to correct any content or language related errors.
- You must upload your answers via the VLE platform **ONLY**.

**You must follow general guideline for students before online examination and during online examination which had already shared by email and WhatsApp.**

**This paper has a total of 03 pages including this title page**

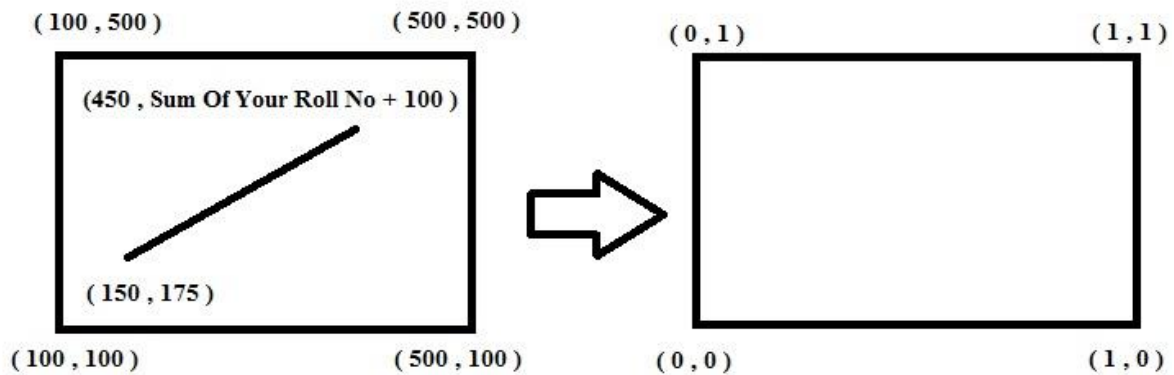


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**Q.1. (10 Marks)**

**Demonstrate** the Conversion of Window to View-Port Transformation for the given figure.

(For Example if Your Roll No is 135 then the value of  $y_w$  will be  $(1 + 3 + 5) + 100 = 109$ )



**Q.2. (10 Marks)**

**Solve the Huffman Tree** along with its code and find the average bits per pixel that is required in Huffman tree.

(For Example if Roll No = 135, then the value of D = 531 and J = 135)

A	B	C	D	E	F	G	H	I	J
78	32	52	Reverse Of Your Roll No	64	25	100	44	58	Your Roll No

**Q.3. (10 Marks)**

**Apply the LZW compression** on your **First Name** and **Last Name**. **Dictionary** (Assume ASCII Codes values).

(For Example if your Name: HAMZA ALI KHAN, so you apply LZW Compression on HAMZA KHAN)

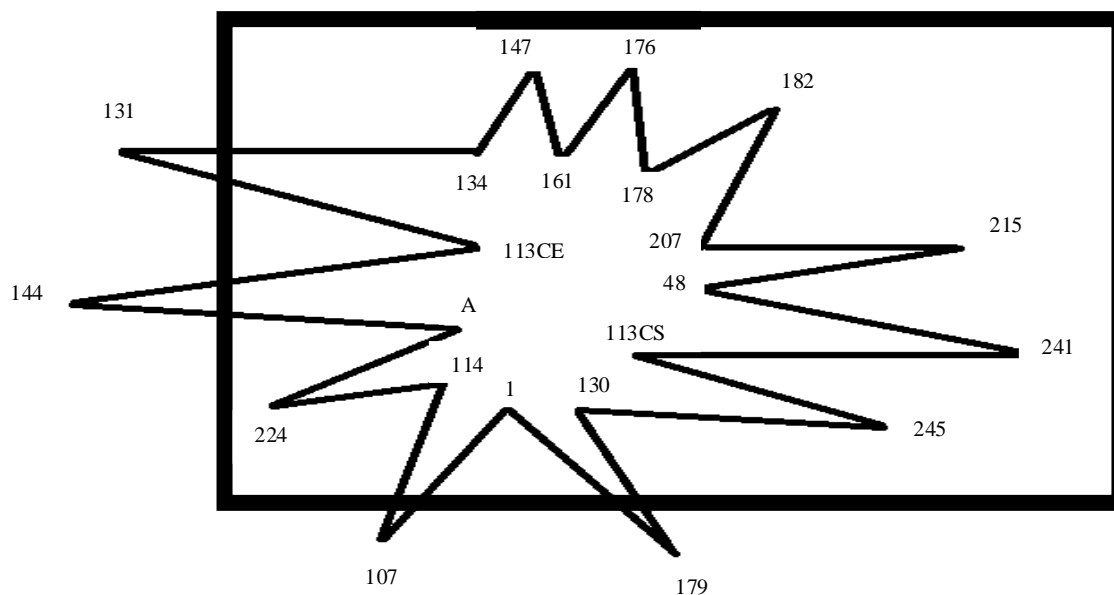


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**Q.4. (10 Marks)**

**Apply** Sutherland-Hodgeman algorithm and clip the given polygon. Consider **Your Roll No** as a starting vertex.

(For Example if your Roll No is 113CE so your Starting Point for this polygon is 113CE)



**Q.5. (10 Marks)**

**(a) Apply** the **shearing** on a square **I(0,0), J(7,0), K(0,7)** and **L(7,7)** the shearing factor **Shx** is **Your Roll no multiply with 2** and shearing factor **Shy** is **Your Roll no** find the new values.

(For Example if your Roll No = 15, then the value of  $Shx = 15 * 2 = 30$  and  $Shy = 15$ )

**(b) Calculate** the coordinates of triangle having **(2,4),(6,4),(4,Your Roll No)** after **reflection** with  $180^\circ$  in **x-axis**. Support your answer in form of graph before and after reflection.

(For Example if your Roll No is 15 then last point will be ( 4 , 15 ) )