Q1: The figure given below shows the details of a ‘SUSPENSION ROD’.
Draw all the parts (14 marks)
Assemble the parts correctly (6 marks)
and then draw to scale 1:1 in drawing sheet: (5 marks)
a- Isometric in third angle b- the top view c- the front view in full section.
d- bill of materials table e- give “10” important dimensions.
Q: Answer TREE questions only: (5 marks each)

A. Draw to scale 1:1 the front view and Top view of a hexagonal headed bolt of size M10x60 mm long, without nut. Keep their common axis parallel to HP and VP. Give standard dimensions.

B. Draw the sectional front view and top view of single riveted butt joint with double row lap joint type to join two plates of thickness 10 mm each. Tack d = 6\sqrt{t} , Pitch = 3d

C. Fill out the table below to the followings:

<table>
<thead>
<tr>
<th>N</th>
<th>Base Size (mm)</th>
<th>System of Fits</th>
<th>Name of Part</th>
<th>Base Size With Symbol</th>
<th>Upper Deviation (μ)</th>
<th>Lower Deviation (μ)</th>
<th>Maximum Limit of size (mm)</th>
<th>Minimum Limit of size (mm)</th>
<th>Tolerance (μ)</th>
<th>Type of Fit</th>
<th>Maximum Clearance (μ)</th>
<th>Minimum Clearance (μ)</th>
<th>Maximum Interference (μ)</th>
<th>Minimum Interference (μ)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>H.b.s</td>
<td>H</td>
<td>S</td>
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</tr>
<tr>
<td>2</td>
<td>H.b.s</td>
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</tbody>
</table>

D. Explain five of the following welding and operating symbols:

1- \[
g 30/300 \]

2- \[
14 \bigcirc 460 \]

3- \[
6 \bigcirc 22 \bigtimes [60] \]

4- \[
N3 \bigtriangleup C \]

5- \[
N9 \bigtriangleup R \]

6- \[
N7 \bigtriangleup T \]

*Good luck!!!*