Mansoura University
Faculty of Engineering
Civil Eng. Dept.

Date: 30-12-2010
Max. Degree (100)

First Year
Final Exam (First Term)
Civil Engineering Drawing

Time allowed 3.0 Hours

Any missing data could be reasonably assumed.
All dimensions are in meter.

Question (1) (75 Marks)

For the R. C. bridge structure illustrated in Fig. 1 it is required to draw with suitable scale:

1-Complet Plan half earth removed. (25 Marks)
2-Sec. Elevation C-C. (25 Marks)
3-Upstream Sec. Side View A-A. (25 Marks)

Question (2) (25 Marks)

For the plan illustrated in Fig. 2, it is required to draw with suitable scale:

1- Complete reinforcement of the slab if the reinforcement is 8\(\phi 10\)/m in main direction and 6\(\phi 10\)/m in the other direction. (7 degrees)
2- Complete reinforcement of beams B1, B2, B3 and C1 if the reinforcement is as illustrated in the above table. (8 degrees)
3- Cross-sections A-A and X-X in beams B1 and C1. (5 degrees)
4-Reinforcement of the isolated footing if the reinforced footing is 2.0m x 2.0m and 70 cm depth with the reinforcement of 7\(\phi 16\)/m in both directions (plain concrete footing depth is 50 cm). (5 degrees)

<table>
<thead>
<tr>
<th>Beam</th>
<th>Section</th>
<th>Reinforcement</th>
<th>Strips</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>bottom</td>
<td>above</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Straight</td>
<td>bent</td>
</tr>
<tr>
<td>B1</td>
<td>25 x 70</td>
<td>4(\phi 16)</td>
<td>3(\phi 16)</td>
</tr>
<tr>
<td>B2</td>
<td>25 x 70</td>
<td>3(\phi 16)</td>
<td>3(\phi 16)</td>
</tr>
<tr>
<td>B3</td>
<td>25 x 70</td>
<td>3(\phi 16)</td>
<td>2(\phi 16)</td>
</tr>
<tr>
<td>C1</td>
<td>25 x 70</td>
<td>2(\phi 16)</td>
<td>-----</td>
</tr>
</tbody>
</table>

Best Wishes
Prof. Lr. K.S. El-Alfy
Fig. 1

Fig. 2

with my best wishes
Prof. Dr. Kassem El-Alfy
Mansoura University  
Faculty of Engineering  
Civil Eng. Dept.  
Date: 30-12-2010  

First Year  
Second Term (Final Exam)  
Civil Engineering Drawing  
Time allowed 4.0 Hours

Any missing data could be reasonably assumed.
All dimensions are in meter.

Question (1)
The following Figure shows half plan of two vents brick-R.C. culvert with slab thickness of 50 cm and brick stepped walls.

It is required to draw with suitable scale:-

1- Plan half earth removed. (30%)
2- Sec. Elevation A-A. (20%)
3- Upstream Sec. Side View. (25%)
4- Downstream Side View. (25%)

Complete the required Pitching

Best Wishes
Prof. Dr. K.S. El-Alfy
Road width 8 m

vent inner dimensions 2x2 ms.

with my best wishes
Prof. Dr. Kassem El-Alfy