No. of Printed Pages : **2+Drawing Sheet** **BICEE-010**

DIPLOMA IN CIVIL ENGINEERING

Term-End Examination

December, 2012

01593

BICEE-010 : ANALYSIS AND DESIGN OF BRIDGES

Time : 3 hours *Maximum Marks : 70*

Note : *Answer **any five** questions.*

1. Explain different forces act an deck slabs. **14**

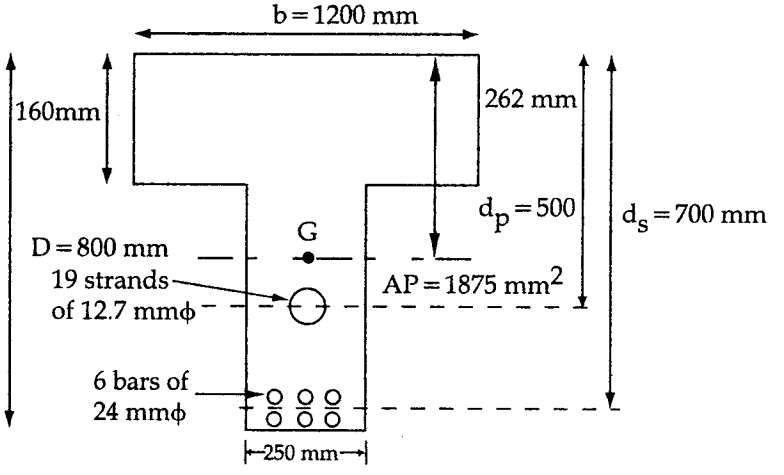
2. Explain in detail the continuous girder bridges and rigid frame bridges. **14**

3. Write different types of steel bridges and illustrate their functions. **14**

4. What is the importance of bearing in bridges and explain bearings for girder bridges ? **14**

5. The cross-section of a class 3-type post tensioned T-girder design to resist a service load moment of 1560 kNm is shown in the figure. The beam is prestressed by a cable containing 19 strands of 12.7 mm diameter stressed to 1133 N/mm^2. The supplementary reinforcement comprises six bars **14**

of 24 mm diameter. Using the rigorous method of cracked section analysis, estimate the width of cracks developed in the beam under working moment.



Note : All dimensions are in mm

14

6. What are the different investigations to be carried out for construction of a bridge in particular site ?

2x7=14

7. Write short notes on *any two* :

   (a) Modern trend in bearing design

   (b) Expansion joints in bridge

   (c) Pre-tension and post-tensioned in prestressed concrete.