SUBJECT CODE:- 226
FACULTY OF ENGINEERING AND TECHNOLOGY
S.E.(CIVIL) Examination Nov/Dec 2015
Theory of Structure-I
(Revised)

[Time: Three Hours]   [Max. Marks: 80]

"Please check whether you have got the right question paper."
N.B i) Attempt any three question from each section
ii) Assume suitable data if necessary and state clearly
Section A

Q.1 Two rod AC & BC are hinged at C and carrying a load of 60 KN at C as shown in fig.1. Determine vertical & horizontal   13
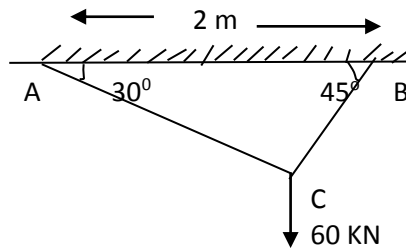defection at joint C. area of AB = 800 mm^2 & of BC = 1000 mm^2 E = 200 GPa.

Fig.01

Q.2 For the beam shown in fig.2 determine position of magnitude of maximum deflection take E = 200 Gpa   13
I = 8 × 10^7(mm^4) use Macaulay's method

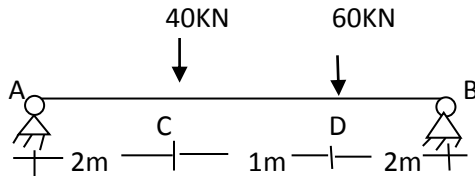

Fig. 02

Q.3 Find the maximum load per mm run on the weld shown in figure 03. Design suitable size of weld also.   13
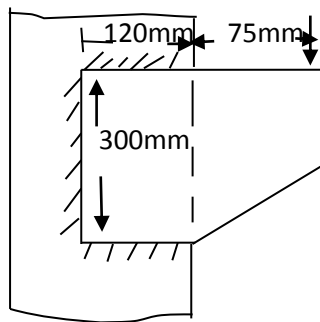

Fig. 03

Q.4 For a fixed beam of 7 m canning three point load of 20 KN, 45 KN & 15 KN at distance of 1 m, 2m & 4m from left   13
support. Draw SFD & BMD.

ac4fd94faaab640f273021ebf88dd89a

Q.5 Write a note on following 14
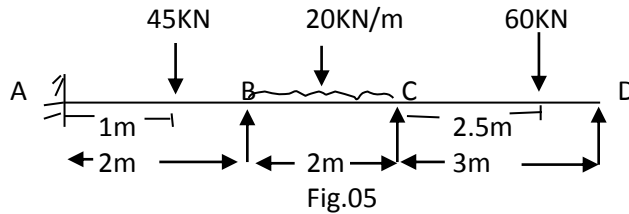   i.   Type of weld
    ii.   Castiglione's theorem
    iii.   Macaulay method

Section – B

Q.6 A parabolic three hanged arch carries load as shown in fig. 04. Find the bending moment, redial shear, normal thurst 13
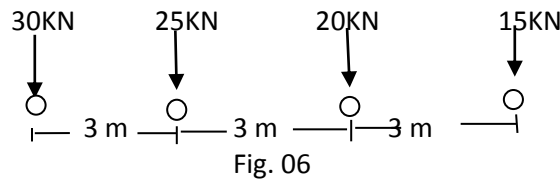at point 6m from left support

Fig. 04
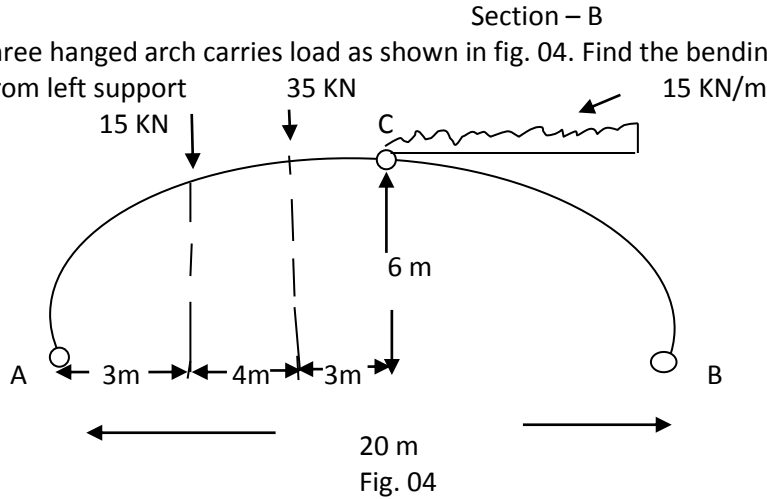
Q.7 Draw bending moment and shear force diagram for a continuous beam shown in fig. 05 14

Fig.05

Q.8 A girder of span 20m is simply supported at the ends of is traversed by locomotive as shown in fig. 06 find the 13
maximum bending moment in the girder of equivalent uniformly distributed load to give the max. BM

Fig. 06

Q.9 For a cable suspension bridge with pan 350m & central dip of 35m, which is stiffened by three hinged stiffening 13
girder. the girder carves two point load of 50KN and 65KN at distance of 70m & 250m from left support. Draw the
bending moment diagram.

Q.10 Write a note on (any two) 13
    i.   ILD for SF & BM at given section in beam
    ii.   Linear or theoretical arch
    iii.   Construction feature of suspension bridge

K-2015