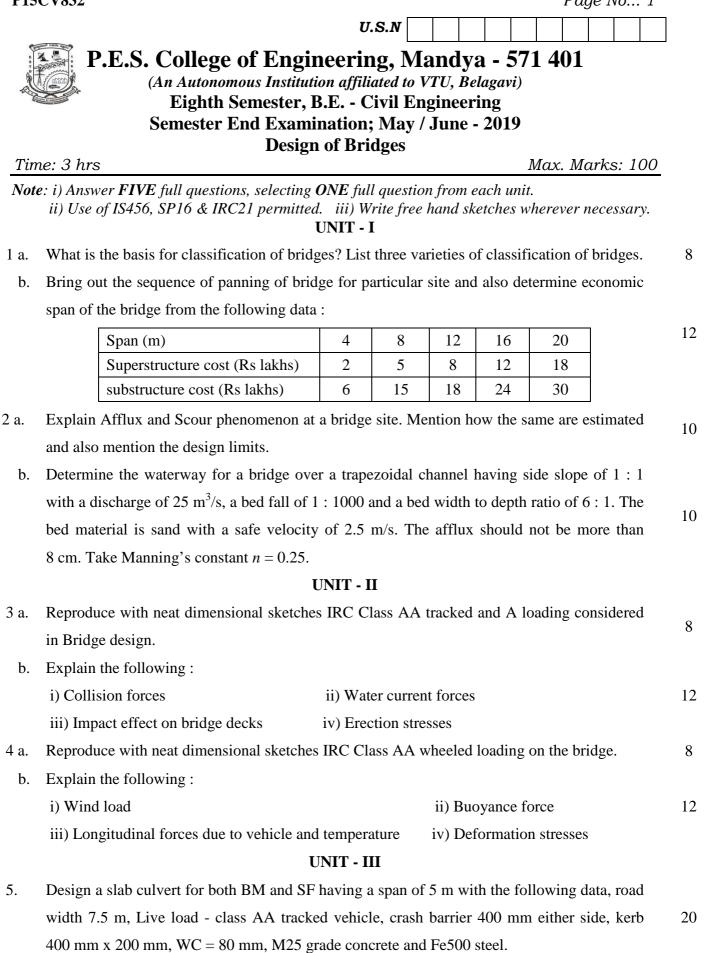
Page No... 1



6. Design a slab culvert for both BM and SF having a span of 6.5 m with the following data, road width 7.5 m, Live load - class AA wheeled vehicle, crash barrier 500 mm either side, 20 kerb 400 mm x 200 mm, WC = 100 mm, M30 grade concrete and Fe500 steel.

Contd...2

## P15CV832

## UNIT - IV

- 7. It is proposed to design a box culvert for effective dimensions of 4.5 m x 4.5 m for a highway with geometric properties such as, road width 7.5 m, LL IRC class A loading vehicle, parapet 500 mm either side, kerb 200 mm, WC = 100 mm. The soil properties obtained from the lab report are, angle of repose  $\varphi = 30^{\circ}$ , unit weight of soil 18 kN/m<sup>3</sup>. The concrete and steel grades to be provided are M40 and Fe415 for the box culvert. Design the box culvert for full flow condition.
- 8. IRC Class AA wheeled vehicle passes over a box culvert with effective dimensions of 3.5 m x 3.5m under no flow condition. The geometric properties of highway are as follows, road width 7.5 m, parapet 500 mm either side, kerb 200 mm, WC = 80mm,  $\varphi = 30^{\circ}$ , unit weight of soil 18 kN/m<sup>3</sup>, design for an empty condition of box culvert using M30 concrete and Fe415 steel.

## UNIT - V

- Design an interior slab of a T beam bridge measuring 3 m x 5 m for IRC class AA Tracked vehicle with M-40 grade concrete and Fe-500 steel.
- 10. Design the main girder of a RCC T Beam bridge central girder of flexure only using the following data for a road bridge :

Clear width of road way = 7 m, effective span = 15 m

Spacing of main girders = 3 m (3 Nos)

Spacing of cross girders = 4 m (5 Nos)

Width of main and cross girder = 300 mm

Depth of main girder = Depth of cross girder

Thickness of wearing cost = 100 mm

Live load - IRC Class AA Tracked Vehicle

M-40 grade concrete : Fe-500 grade steel

\* \* \* \*

20

20

20