Total No. of Printed Pages:2

SUBJECT CODE NO:- P-394
FACULTY OF ENGINEERING AND TECHNOLOGY
B.E. (Civil) Examination MAY/JUNE-2016
Advanced Structures[Elective-II]
(Revised)

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

"Please check whether you have got the right question paper."

N.B i. Attempt **any two** questions from each section
ii)Use of IS 456:2000 is allowed
iii) Use of Non-programmable calculator is allowed.
iv) Assume suitable data, if required & state it Cleary

Section A

Q.1 A building rests on six column's 400 mm diameter arranged as shown in fig-1. Each central column carried a load of 800KN & the end columns carry 500KN each .Design main beam ABC & secondary beam BE of the raft foundation. Consider total wind load moment of 1200KN-m. SBC of soil 75 KN/m^2. Use M_{20} & Fe_{415} 20

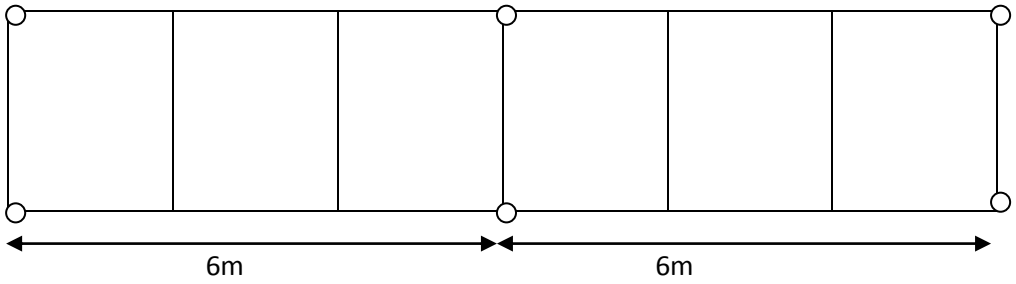

Figure 1

Q.2 A 600 mm square column is supported on four piles of 300mm diameter each. The centre of each pile is located at a distance of 0.5m from the central of column. The column carries a service load of 1000KN & moment of 75KN-m There is a moment of 250 KN-m due to wind acting in any direction at a time. Design the pile cap use M_{20} & Fe_{415} steel. 20

Q.3 A cylindrical water tank is 6.5m in diameter, contains water up to a height of 2.8m excluding free board, tank rests on a ring beam at a bottom 6.5m in diameter. Dead weight of various components of water tank excluding water load transferred to ring beam is 50KN/m design the ring beam. Use free board 0.2m use M_{20}& Fe $_{415}$ grades. The ring beam is supported by eight symmetrically placed columns 20

No of column's	2θ	β_s	β_m	β_T	Φ
8	45	0.066	0.033	0.055	9.5^0

Show the reinforcement details.

Section B

Q.4 a) Explain how do you analyze a deck slab bridge with reference to moving load on slab ,dispersion of load along span 10

b) What are the bolded plates? Discuss the merits & demerits of it. 10

Q.5 a) Explain the various types of transmission towers & their utility in load resistance 10
b) Explain the terms 10
i) Solidity ratio
ii) Guyed towers
iii) Lattice towers

Q.6 a) A reinforced concrete deep girder is continuous over span of 9m apart from centre to centre. It is 5 m deep, 300 mm thick & the columns are 900 mm in width. If the grinder supports a uniformly distributed load of 250 KN/m including its own weight. Design the beam using M_{20} concrete & Fe_{415} steel. Show reinforcement detailing 12

b) Compare the design of deep beam by British code & American code 08

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