SV-6

Seat No.	

Total No. of Pages : 3

First Year Engineering (All Branches) (Semester - I & II) (New) Examination, May - 2018
BASIC CIVIL ENGINEERING
Sub. Code : 59179

Day and Date : Tuesday, 08 - 05 - 2018 **Total Marks : 100**
Time : 10.00 a.m. to 1.00 p.m.

Instructions :
1) **All questions are compulsory.**
2) **Figure to the right indicate full marks.**
3) **Make suitable assumptions wherever Necessary and mention it clearly.**
4) **Use of non-programmable calculator is allowed.**

SECTION-I

Q1) a) The subject 'Basic Civil Engineering' is of vital importance to the all branches of engineering. Comment on this statement with suitable illustrative examples. **[8]**

OR

a) Enlist various principles of building planning. Explain any three of them in brief. **[8]**

b) Write short note on orientation of building. **[4]**

c) Explain the Bylaws: **[4]**

i) Height of Building

ii) Building line and control line

Q2) Answer the following:

a) What is bearing capacity of soil? Explain its importance in building Construction. **[6]**

b) Give classification of shallow foundation. Explain any two types in detail. **[6]**

c) What is deep foundation? Explain any one deep foundation with neat sketch. **[6]**

P.T.O.

Q3) a) Enlist various building materials. State and explain various types of cement with their properties and use. **[8]**

OR

a) Write a note on Preservation of timber and seasoning of timber. **[8]**

b) Differentiate between load bearing and framed structure. **[4]**

c) Write a note on various types of loads considered in design of building. **[4]**

SECTION-II

Q4) a) Explain how surveyor's compass differs from prismatic compass? What are the temporary adjustments of compass? **[4]**

b) What is offset? What are the types of offset? Which instruments are used for offsetting? **[4]**

c) The distance between two stations was measured with a 20 m chain and was found to be 1200 m. The same distance was measured with 30 m chain and was found to be 1195.40 m. If the 20 m chain was 5 cm too short, what was the error in the 30 m chain? **[8]**

OR

c) Observed bearings for a closed compass traverse are given below. Find the local attraction at each end of the affected station and correct all bearings. Tabulate the data and results. Find also included angles. Show all calculations. **[8]**

Line	PQ	QR	RS	ST	TP
F.B.	S 85° W	S 30° W	N 55° E	N 63° E	N 27° W
B.B	N 85° E	N 30° W	S 50° W	S 73° W	S 32° E

Q5) a) Attempt Any Two questions from following:

i) The following readings were recorded by a planimeter with anchor point inside the figure. I.R. = 9.918 F.R. = 4.254 M = 100 cm^2 C = 23.521

Calculate area of the figure when it is observed that zero mark of the counting disc passes the index mark once in anticlockwise direction. **[4]**

ii) State uses of Total station. **[4]**

iii) Define: Contour interval, CP, HI, BS. **[4]**

b) The following staff readings were observed on a continuously sloping ground along the center line of a road; with the help of a dumpy level and 4 m staff at 20 m interval. The first reading was taken on starting point of R.L. 350 m.

0.540, 1.245, 2.375, 3.885, 1.245, 2.560, 3.780, 0.875, 1.625, 2.960, 3.425, 3.830.

Enter the readings in a page of level book. Find R.L.s by Rise and Fall method. Apply usual checks. Determine longitudinal gradient of the road. **[10]**

Q6) a) Draw a labeled diagram of cross section of road in cutting. **[4]**

b) Draw cross section of 'Broad gauge railway track' and explain functions of various components. **[4]**

c) Along with neat sketch explain components of Earthen Dam. **[4]**

d) Explain with neat diagram functions of following units in water treatment plant: **[4]**

i) Aeration unit

ii) Flocculation tank

iii) Filtration tank

iv) Chlorination Tank

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