

**B.Tech. SEM -I (Chemical/ Civil/ Electrical/ Mechanical/ Production/ Computer/ Info. Tech./ Electronics / Bio Medical / E & TC) 2014** winter-  
**Course (CBCS) : WINTER - 2018** 2018

**SUBJECT: FUNDAMENTALS OF CIVIL ENGINEERING**

Day: Tuesday  
Date: 27/11/2018

W-2018-2262

Time: 10.00 AM TO 01.00 PM  
Max Marks: 60

**N.B.:**

- 1) All questions are **COMPULSORY**.
- 2) Figures to right indicate **FULL** marks.
- 3) Assume suitable data, if necessary.
- 4) Use of non-programmable calculator is **ALLOWED**.

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- Q.1** a) Describe the scope of civil engineering with respect to Mechanical and Chemical engineering branches. (05)  
b) Enlist different of paints and give their applications. (05)
- OR**
- Q.1** a) Explain types of steel, bricks and concrete used in construction. (05)  
b) Enlist different government authorities related to civil engineering. Give the functions of any two. (05)
- Q.2** a) Define magnetic meridian, true meridian and magnetic north. (03)  
b) A traverse ABCDEA is a regular pentagon traversed in a clockwise direction. The fore bearing of line AB is 62 degree. Find the bearings of all other lines. Draw the traverse and show bearings (07)
- OR**
- Q.2** Following readings were taken with dumpy level. The instrument was shifted after 4<sup>th</sup>, 6<sup>th</sup> and 9<sup>th</sup> reading. The reduced level of first point is 55.00m. Find reduced level of other points and apply arithmetical check. (10)  
1.365, 2.250, 1.335, 1.890, 2.630, 1.950, 2.185, 2.675, 1.045, 1.885, 2.080, 1.755
- Q.3** a) Define builtup area, carpet area, FSI, building line and control line. (05)  
b) What are the functions of building bye laws? Give bye laws for sizes of rooms of building. (05)
- OR**
- Q.3** a) Discuss the concept of intelligent building. (05)  
b) What are the factors considered for selection of site for residential building? (05)
- Q.4** a) Draw the sketches of raft and trapezoidal footing and give their suitability. (06)  
b) Enlist the factors considered for design of earthquake resistant building. (04)
- OR**
- Q.4** a) What is bearing capacity of soil? What are the types of bearing capacity? (05)  
b) Discuss the zones of earthquake. (05)
- Q.5** a) What are the applications of dams? Enlist any three names of dams and river on which they are situated. (05)  
b) Draw a neat sketch of sewage treatment plant. (05)
- OR**
- Q.5** a) What are the different methods of irrigation? Explain any one with neat sketch. (05)  
b) Draw a neat sketch of water treatment plant and give application of each unit? (05)
- Q.6** a) Give the classification of roads by different ways? (05)  
b) Give different types of railway gauges used and draw c/s of railway track showing all components. (05)
- OR**
- Q.6** a) Draw neat sketch of road in embankment. (05)  
b) What are the runway and taxiways? (05)