

**B.TECH. SEM -I (CHEMICAL/ CIVIL/ ELECTRICAL/
MECHANICAL/ PRODUCTION/ COMPUTER/ INFO. TECH./
ELECTRONICS / BIO MEDICAL / E & TC) 2014 COURSE (CBCS)
: SUMMER - 2018
SUBJECT : FUNDAMENTALS OF CIVIL ENGINEERING**

Day : **Saturday**
Date : **26/05/2018**

S-2018-2206A

Time : **10.00 AM TO 01.00 PM**
Max. Marks : 60

N. B. :

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Use of non-programmable calculator is **ALLOWED**.
- 4) Draw neat and labeled diagram **WHEREVER** necessary.
- 5) Assume suitable data, if necessary.

- Q. 1**
- a) Explain role of civil engineering. **(05)**
 - b) Enlist different branches of civil engineering and explain irrigation engineering in detail. **(05)**

OR

- a) Enlist different building components and draw the diagram showing all components. **(05)**
- b) Enlist different materials of construction and explain applications of steel and plywood. **(05)**

- Q. 2**
- a) What are the principles of surveying and explain them briefly. **(05)**
 - b) Draw the traverse PQRSP and find out included angles from given bearing: **(05)**

Line	F. B.	B. B.
PQ	$58^{\circ} 00'$	$238^{\circ} 00'$
QR	$133^{\circ} 45'$	$313^{\circ} 45'$
RS	$190^{\circ} 30'$	$10^{\circ} 30'$
SP	$299^{\circ} 30'$	$119^{\circ} 30'$

OR

- a) Enlist different types of Bench Marks and explain any one of them. **(03)**
- b) The following readings were taken with dumpy level and 4 m leveling staff. **(07)**
The instrument was shifted after 5th and 8th reading determine reduced levels of the ground by collimation plane method. Apply arithmetical check. Take R-L of first point 550.500 m.
0.735, 1.005, 1.900, 2.560, 1.865, 1.445, 1.035, 1.225, 1.400, 2.150, 1.970.

P. T. O.

- Q. 3** a) Enlist different principles of planning and explain grouping and roominess. (05)
b) Explain concept of Eco friendly building and new techniques adopted in it. (05)

OR

- a) Explain necessity of bye laws and give the details of bye laws for height of building. (05)
b) Define carpet area, built up area, FSI, plinth area, set back distance. (05)

- Q. 4** a) Enlist different types of foundation and explain cantilever footing. (05)
b) Explain guide lines for earthquake resistant design for buildings. (05)

OR

- a) Explain causes of failure of foundation. (05)
b) Explain causes of earthquake and epicenter. (05)

- Q. 5** a) Enlist different types of dams and explain with neat sketch gravity dam. (05)
b) Draw the flowchart for sewage treatment plant. (05)

OR

- a) Explain any two methods of irrigation. (05)
b) Draw flow chart for water supply treatment plant. (05)

- Q. 6** a) Explain with sketch sight distance. (05)
b) Draw a cross section of railway track. (05)

OR

- a) Explain different types of cambers with neat sketch. (05)
b) Draw neat diagram showing components of bridge. (05)

* * * * *