320313 (20)

BE (3rd Semester)

Examination, Nov.-Dec., 2021

Branch : Civil

SURVEYING-I

Time Allowed : Three Hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note : (i) (a) bit of every question is compulsory.

(ii) Answer any two from the remaining completely.

Q. 1. (a) What do you understand by reciprocal levelling ? 2

(b) During a construction work, the botttom of a R.C. chajja A was taken as a temporary B.M. (R.L. 63.120).

The following notes were recorded :

Reading on inverted staff on B.M. No. A – 2.232.

Reading on Peg P on ground – 1.034

Change of instrument

Reading on Peg P on ground : 1.328

Reading on inverted staff on Bottom of cornice B : 4.124.

Enter the reading in a level book page and calculate the R.L. of cornice B.　　　7

(c) Discuss the effects of curvature & refraction in levelling. 7

(d) Differentiate between 'permanent' & 'temporary' adjustments of level. 7

Q. 2. (a) What do you understand by Contour Interval (C.I.) ? 2

(b) What is grade contour ? How will you locate it : 7

(i) on the ground

(ii) on the map

(c) Explain the process of interpolation of contours by arithmetic calculations. 7

(d) Give a brief account with sketches on the uses of contour maps. 7

Q. 3. (a) What is face left observation in theodolite ? 2

(b) What are the different errors in theodolite work ? How are they eliminated ? 7

(c) Explain the principle of surveying (traversing) with the compass. 7

(d) The table below gives the lengths and bearings of the lines of a traverse, ABCDE, the length and bearing of EA having been omitted. Calculate the length & bearing of the line EA. 7

Line	Length (m)	Bearing
AB	204	87°30'
BC	226	20°20'
CD	187	280°0'
DE	192	210°80'
EA	?	?

Q. 4. (a) What do you understand by the term

orientation in plane tabling ? **2**

(b) Explain the process of resection by three

point problem. **7**

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(c) Give a brief account on errors in plane tabling. **7**

(d) Give short notes on advantages & disadvantages of plane tabling. **7**

Q. 5. (a) What is the purpose of providing curve ? **2**

(b) Give classification of curve with neat sketches. **7**

(c) Calculate the ordinates at 10 meters distances for a circular curve having a long chord of 80 meters and a versed sine of 4 meters. **7**

(d) What are the common difficulties in setting

out simple curves ? Describe briefly the one

method employed in overcoming them.   7

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