

**B020314(020)**

**B. Tech. (Third Semester) Examination,  
Nov.-Dec. 2020**

**(New Scheme)**

**(Civil Engg. Branch)**

**PLANE SURVEYING**

**Time Allowed : Three hours**

**Maximum Marks : 100**

**Minimum Pass Marks : ~~40~~ 35**

**Note : Part (a) is compulsory in all the questions.**

**Attempt any two parts from (b), (c) and (d).**

- 1. (a) What is Leveling and why it is important in survey work?**

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- (b) Explain in detail the permanent adjustment of a Dumpy level. 8
- (c) Write short notes on : (any two) 8
- (i) Reciprocal leveling
- (ii) Fly leveling
- (iii) Profiles leveling
- (d) Discuss the effect of curvature and refraction applied to leveling and deduce expression for each of them along with the combined correction. 8

### Unit-II

2. (a) What is the differences between vertical cliff and over hanging cliff, draw contours for that? 4
- (b) What are the different methods of locating contours? 8
- (c) What is interpolation of contours? Explain any one method of contour interpolation. 8
- (d) Draw neat sketch and explain working of any two minor instruments : 8
- (i) Hand level

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- (ii) Box sextant
- (iii) Pantograph

### Unit-III

3. (a) How a theodolite can be used as a dumpy level? 4
- (b) Write a detailed note on permanent adjustment of theodolite. 8
- (c) Explain various sources of errors in Theodolite. 8
- (d) Write short notes on : (any two) 8
- (i) Face right and face left observations
- (ii) Swinging the telescope
- (iii) Transiting the telescope

### Unit-IV

4. (a) What is plane table survey? How it is different from other methods of survey? 4
- (b) What is three points problem? Explain by neat sketch by applying of plane table work. 8
- (c) Explain merits and demerits of various methods of orientation of plane table work. 8

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- (d) Name the common methods of balancing the traverse.  
How is closing error in a traverse balanced? 8

### Unit-V

5. (a) Write the relationship between radius and degree of curve. 4
- (b) Explain the elements of simple circular curve. Give their relationship. 8
- (c) What are the elements of compound curve? Explain with neat sketch. 8
- (d) Derive intrinsic equation of ideal transition curve. 8