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2018

End Semester B. Arch Examination

2nd Semester

Surveying and Levelling

Full Marks- 70

Pass Marks- 21

Time- 3 hours

The figures in the margin indicate full marks.

PART-A

Q.1. Fill up the blanks below:

(16x1=16)

- a. is the art of determining the relative positions of different objects on the surface of the earth by measuring horizontal distance between them.
- b. Plane surveying is done on an area thankm.
- c. In geodetic survey, the of the earth is taken into consideration.
- d. survey are primarily for planning, design and execution of highway, railway, canals, pipelines and other linear projects.
- e. surveying is for establishing the horizontal and vertical positions of widely spaced control points using geodetic method.
- f. In trilateration, all the three sides of a triangle are measured with instrument.
- g. A line to a level surface is called a horizontal line.
- h. The vertical distance of a point from an assumed datum or MSL is known as
- i. is the degree of closeness or conformity of repeated measurements of the same quality to each other.
- j. errors are not actually errors but carelessness of the observer.
- k. Differential levelling is also called levelling.
- l. In levelling only BS and FS readings are taken and no distance is measured long the direction of levelling.
- m. The vertical distance between the line of sight and the level line at a particular place is called correction.
- n. The angle between the horizontal line and tangent line is known as
- o. The dip angle is given by the expression
- p. The true difference of level between A and B point is given by the expression

PART-B

Q.2. Answer all the following questions:

(4x3.5=14)

- a. Define surveying. Write the two principles of survey. Which one is more suitable?
- b. Define the term "Precision and Accuracy" of measurements. Explain the indirect method of distance measurement.

- c. Define levelling. Draw the diagram and explain the process of fly levelling.
 d. Define contouring. Write four uses of contour map.

PART-C

Answer any ONE option from the given questions. Each option carries 10 marks

(4x10=40)

3. Explain in details the classifications of surveying.

OR

Write the importance of surveying in civil engineering. Also write the phases of survey work. Write five uses of surveying.

4. Explain the methods of distance measurement in surveying.

OR

Explain in details the different types of errors in surveying.

5. Explain in details the different types of levelling operations and corrections to be applied while levelling.

OR

Explain the procedure of reciprocal levelling with figure. Derive the expression for true difference of level between two points on opposite banks of river.

6. Write the characteristics of contours. Explain in brief the methods of contouring.

OR

The following observations were made during the testing of a dumpy level:

Instrument at	Staff reading at		Remark
	A	B	
A	1.725	2.245	RL at A = 450m
B	2.145	3.045	

Distance between A and B is 200m. Find the RL at B.