

ENGLISH

[TIME ALLOWED—3 HOURS]

(MARKS—100)

SURVEYING (THEORY-2)

- Instructions.*—(1) All questions are *compulsory*.
 (2) Figures to the right indicate *full* marks.
 (3) Draw neat sketches wherever *necessary*.
 (4) Assume suitable data if *necessary*.

Marks1. (a) Fill in the blanks (any *five*) :—

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- (i) The longest line passing through the centre of the area is known as
 (a) Base line (b) Chain line
 (c) Survey line (d) Centre line.
- (ii) Traversing method is used in survey.
 (a) Chain (b) Compass
 (c) Plane table (d) Theodolite.
- (iii) A chain length of 30 m. consists of..... links.
 (a) 100 (b) 15
 (c) 20 (d) 30.
- (iv) Line ranger is used for
 (a) Levelling (b) Area
 (c) Offsets (d) Ranging a line.
- (v) Dumpy level is mounted on
 (a) Stand (b) Staff
 (c) Ground (d) None of this.
- (vi) Length of levelling staff is Meters.
 (a) 2 (b) 5
 (c) 3 (d) 4.

(b) State *True* or *False* (any *five*) :—

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- (i) Marine survey related with water.
 (ii) Planimeter is used to measure angles.
 (iii) Surveying means to work from whole to part.
 (iv) Auto level is used in plane table surveying.
 (v) Area can be calculated by cross staff survey.
 (vi) Needle of prismatic compass constant on East-West.

(c) State Long form of the following (any *five*) :—

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- (i) F.S. (ii) M.S.L. (iii) B.M.
 (iv) R.B. (v) B.S. (vi) F.S.I.

[Turn over

Marks

- (d) Match the following :— 5
- | Group 'A' | Group 'B' |
|--------------------------|----------------------------------|
| (i) Wooden pegs | (a) Chain and cross staff survey |
| (ii) Prismatic compass | (b) 2 to 3 m. length |
| (iii) French cross staff | (c) 30 cm. long |
| (iv) Ranging rods | (d) laying of horizontal angles |
| (v) Theodolite | (e) Compass survey. |
2. Attempt any *two* of the following :— 16
- (a) Define Surveying. State the principles of Surveying.
- (b) Explain the principles of plane table surveying.
- (c) What is Bench mark ? Explain the types of Bench mark.
- (d) Explain the method of testing and adjustment of chain.
3. Attempt any *two* of the following :— 16
- (a) Write note on 20 m. length chain with sketch.
- (b) Draw a neat sketch of optical square with its principles.
- (c) Convert the following W.C.B. to R.B.
- (i) $74^{\circ}30'$ (ii) 160° (iii) $235^{\circ}30'$ (iv) $335^{\circ}30'$.
- (d) Differentiate between collimation plane method (H.I.) and rise and fall method.
4. Attempt the following (any *two*) :— 16
- (a) Draw the symbols of railway line, hedge, cultivated land, water pipe line.
- (b) Write on—A alidade, a plumbing fork give the method of orientation in Plane table survey.
- (c) Explain uses of surveying.
- (d) Explain bearing and their types.
5. Write short notes (any *four*) :— 16
- (a) Planimeter (b) Tilting level (c) Contour
- (d) Invar tape (e) Representative fraction.
6. Attempt the following (any *two*) :— 16
- (a) Explain the characteristics of contour with neat sketches.
- (b) Which errors are occurred during chaining work ? Explain in detail.
- (c) Convert R.B. into W.C.B.
- (i) N 30 W (ii) S 45 E (iii) S 75 E (iv) N 48 E.
- (d) Draw a labeled sketch of prismatic compass. Explain the different Components of it.
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