

No. of Printed Pages : 4                      180733/170733/120733  
Roll No. .... /030733

**3rd Sem / Civil, Brick Tech, Const Mgmt, Highway Engg.**  
**Subject:- Surveying - I**

Time : 3Hrs.    M.M. : 100

**SECTION-A**

**Note:** Multiple choice questions. All questions are compulsory  
(10x1=10)

- Q.1 Which of the following scale is largest one? (CO1)  
a) 1 cm = 50 m                      c) 1 : 42000  
b) R.F. = 1/30000                      d) 1 cm = 50 km
- Q.2 Which of the following is an obstacle to chaining but not to ranging? (CO2)  
a) Building                      c) Hillock  
b) River                      d) None of these
- Q.3 The permissible error in chaining for measurement with chain on rough or hilly ground is (CO2)  
a) 1 in 100                      c) 1 in 500  
b) 1 in 250                      d) 1 in 1000
- Q.4 A negative declination shows that the magnetic meridian is to the \_\_\_\_\_ (CO3)  
a) Western side of the true meridian  
b) Southern side of the true meridian  
c) Eastern side of the true meridian  
d) None of these
- Q.5 A gate cap is fitted with \_\_\_\_\_ (CO3)  
a) Cross staff                      c) Chain  
b) Level                      d) Prismatic compass
- Q.6 Local attraction in compass surveying may exist due to (CO3)  
a) Presence of magnetic substance near the instrument  
b) Loss of magnetism of the needle  
c) Incorrect leveling of the magnetic needle  
d) Friction of needle at the pivot

- Q.7 The following sights are taken on a "Turning Point" (CO4)  
a) Backsight only  
b) Foresight and Backsight  
c) Foresight only  
d) Foresight and Intermediate sight

- Q.8 The rise and fall method of levelling provides a complete check on (CO4)  
a) Back sight                      c) Fore sight  
b) Intermediate sight                      d) All of the above

- Q.9 "Three Point Problem" can be solved by (CO5)  
a) Tracing paper method  
b) Lehman's method  
c) Bessels method  
d) All of the above
- Q.10 Detailed plotting is generally done by (CO5)  
a) Traversing                      c) Resection  
b) Radiation                      d) All of the above

**SECTION-B**

**Note:** Objective type questions. All questions are compulsory.  
(10x1=10)

- Q.11 A metallic tape is made of \_\_\_\_\_ (Linen / Cloth & Wire) (CO1)
- Q.12 The maximum tolerance in a 20m chain is \_\_\_\_\_ (± 5mm / ± 3mm) (CO2)
- Q.13 A line joining the tie stations is known as \_\_\_\_\_ (Base line / Tie line) (CO2)
- Q.14 The horizontal angle between the true meridian and magnetic meridian at a place is called \_\_\_\_\_ (Magnetic bearing / Declination) (CO3)
- Q.15 The correction for slope is required when the points of supports are not at the same level. (True/False) (CO2)
- Q.16 In an internal focusing type of telescope, the lens provided is \_\_\_\_\_ (Concave/Convex) (CO4)

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- Q.17 Axis of telescope is an imaginary line joining the centre of the eye piece and the optical centre of the \_\_\_\_\_ (Object-glass / leveling staff) (CO4)
- Q.18 Sensitiveness of a level tube is designated by \_\_\_\_\_ (Length of level tube / radius of level tube) (CO4)
- Q.19 The size of plane table is \_\_\_\_\_ (600mm x 750 mm / 300mm x 450mm) (CO5)
- Q.20 Intersection method of detailed plotting is most suitable for \_\_\_\_\_ (Plains / Hilly areas) (CO5)

### SECTION-C

**Note:** Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

- Q.21 What is the importance of surveying in civil engineering projects? (CO1)
- Q.22 Name the different classifications of surveying based on nature of field survey and describe any one of them. (CO1)
- Q.23 A steel tape was standardize as 30 m at 18°C. A line was measured as 460.40m with temperature during measurement as 30°C. Calculate the true distance of the line. Coefficient of expansion for steel = 0.00012 per degree rise of temperature . (CO2)
- Q.24 What are the obstacle in chain surveying? (CO2)
- Q.25 Convert the following QB to WCB: (CO3)
- a) N 12°45' E                      b) S 72°15' E
- c) S 73°05' W                      d) N 29°30' W
- e) N 37°30' W
- Q.26 Differentiate between surveyor compass and prismatic compass. (CO3)
- Q.27 An angle of elevation was observed from a station A as 3°30'30" Determine its true value if the height of instrument at A is 1.53 m and height of signal at another station B is 6.2 m The two stations are 6200 m apart. Take the value of  $R \sin 1''$  as 30.90m . Take  $m = 0.07$  (CO4)
- Q.28 Describe the effect of curvature in leveling. (CO4)
- Q.29 Describe the process of temporary adjustment of a dumpy level. (CO4)

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- Q.30 Find the combined correction for curvature and refraction for distance of \_\_\_\_\_ (CO4)
- a) 6505 meters                      b) 2.91 Km
- Q.31 Write a short note on reciprocal leveling. (CO4)
- Q.32 Write a short note on orientation of plane table by back sight . (CO5)
- Q.33 Name the different equipments used for plane table surveying. (CO5)
- Q.34 What do you understand by strength of fix in plane table surveying. (CO5)
- Q.35 Write any five disadvantages of plane table surveying. (CO5)

### SECTION-D

**Note:** Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

- Q.36 The following staff readings were observed successively with a level, the instrument having been moved after 4th, 7th and 10th reading: 2.655, 3.745, 3.830, 2.275, 2.645, 0.385, 0.960, 1.640, 2.845, 2.845, 2.680 and 3.265 meters. Enter the above readings in a page of a level book and calculate the RL of points using Height of Instrument method, if the first reading was taken with a staff held on a bench mark of 105.050 m. (CO4)
- Q.37 Explain the graphical method for solving the three point problem. (CO5)
- Q.38 The following bearing were observed while traversing with a compass:
- | Line | FB      | BB      |
|------|---------|---------|
| AB   | 74°15'  | 256°00' |
| BC   | 107°15' | 286°15' |
| CD   | 224°45' | 44°45'  |
| DA   | 307°45' | 127°00' |
- Mention which stations were affected by local attraction and determine the corrected bearings. (CO3)

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