

No. of Printed Pages : 4  
Roll No. ....

220733

**3rd Sem / Civil**  
**Subject : Surveying - I**

Time : 3 Hrs.

M.M. : 60

**SECTION-A**

**Note:** Multiple choice questions. All questions are compulsory (6x1=6)

- Q.1 For a well conditioned triangle, no angle should be less than \_\_\_\_\_  
a) 20°                                      b) 45°  
c) 30°                                      d) 60°
- Q.2 An invar tape is made of an alloy of \_\_\_\_\_  
a) Brass and Nickel      b) Brass and Steel  
c) Nickel and Steel      d) Copper and Steel
- Q.3 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

(1)

220733

- Q.4 The following sights are taken on a “Turning Point”  
a) Backsight only  
b) Foresight only  
c) Foresight and Backsight  
d) Foresight and Intermediate sight
- Q.5 Steep ground is represented by \_\_\_\_\_  
a) Widely separated contour line  
b) Closely packed contour line  
c) Parallel running contour line  
d) None of the above
- Q.6 The horizontal distance between two consecutive contour line is \_\_\_\_\_  
a) Contour interval  
b) Contour length  
c) Contour distance  
d) Horizontal equivalent

**SECTION-B**

**Note:** Objective/ Completion type questions. All questions are compulsory. (6x1=6)

- Q.7 Define the term linear measurement.
- Q.8 Define the term magnetic dip.
- Q.9 Define the term Bench mark.
- Q.10 Define the term contour interval.

(2)

220733

- Q.11 The instrument used for accurate centering in plane table survey is \_\_\_\_\_ (U-fork / Alidade)
- Q.12 A metallic tape is made of \_\_\_\_\_ (Cloth & Wire / Linen)

### SECTION-C

**Note:** Short answer type questions. Attempt any eight questions out of ten questions. (8x4=32)

- Q.13 Describe the principles of surveying.
- Q.14 Convert the following WCB to QB:
- a)  $142^{\circ}15'$                       b)  $223^{\circ}45'$
- c)  $63^{\circ}10'$                          d)  $285^{\circ}30'$
- Q.15 Write the various uses of prismatic compass.
- Q.16 Enlist the natural errors in levelling and describe any one of them.
- Q.17 Describe the process of temporary adjustment of an Auto Level.
- Q.18 Write the various advantages of plane table surveying.
- Q.19 Describe the procedure of orientation of plane table by trough compass.
- Q.20 Describe the various characteristics of contours.
- Q.21 Write a short note on "Interpolation of contour".
- Q.22 Describe the use of contours for the marking of alignment of a national highway.

### SECTION-D

**Note:** Long answer type questions. Attempt any two questions out of three questions. (2x8=16)

- Q.23 The following bearings were observed while traversing with a compass:

Line	FB	BB
AB	$74^{\circ}15'$	$256^{\circ}00'$
BC	$107^{\circ}15'$	$286^{\circ}15'$
CD	$224^{\circ}45'$	$44^{\circ}45'$
DA	$307^{\circ}45'$	$127^{\circ}00'$

Mention which stations were affected by local attraction and determine the corrected bearings.

- Q.24 The following staff readings were observed successively with a level, the instrument having been moved after 3<sup>rd</sup>, 6<sup>th</sup> and 8<sup>th</sup> reading: 2:230, 1.605, 0.990, 2.090, 2.865, 1.265, 0.600, 1.980, 1.045, 2.685 meters. Enter the above readings in a page of a level book and calculate the RL of points using rise and fall method, if the first reading was taken with a staff held on a bench mark of 432.385 m.
- Q.25 Explain the radiation method of plane table surveying with the help of diagram.