COMPETITIVE ENTRANCE EXAMINATION INTO HTTTC BAMBILI	
CYCLE: 1ST CYCLE **LEVEL: 1ST YEAR** **OPTION: TOPOGRAPHY**	**Session: 2013**
DURATION: 3hrs	

- **In your answer booklet, write only the letter of the answer chosen against the question number.**
- **This question paper must be submitted together with the answer booklet.**
- **Each question carries one (1) mark**

Paper: Project

1. The type of transverse which you start at a point and come back to the point is called a:
   a) Controlled transverse
   b) Flying transverse
   c) Raying transverse
   d) Closed transverse
2. A close transverse has the advantage over a controlled transverse because:
   a) I has the possibility of checking linear errors
   b) It has the possibility of checking linear and angular errors
   c) It has the possibility of angular errors
   d) It is most difficult method of land surveying
3. A raying or radial transverse has the following advantages
   a) It is the most convenient and precise method of surveying
   b) It has all the possibilities of controlling linear and angular errors
   c) It is the most risky and unreliable method of surveying
   d) It is the easiest method of land surveying

4. You are required to take a connection between two non intervissible controlled pillars:
   a) It is impossible to take the connection
   b) You can take a compass bearing to take the connection
   c) You can need to take a preliminary survey between the two points
   d) It is so difficult to do the job
5. The formula for solving a triangle given three sides a, b and c is given by:
   a) $c^2 = a^2 + b^2 + 2absinc$
   b) $c^2 = a^2 - b^2 - 2absinc$
   c) $c^2 = a^2 + b^2 - 2abcosc$
   d) $c^2 = a^2 + b^2 + 2abcosc$
6. The formula to calculate the area of a triangle given sides a, b and angle c is given as:
   a) Area = 2absinθ
   b) Area = 1/2absinθ
   c) Area = 2abcosθ
   d) Area = 1/2abcosθ
7. The most precise method of leveling in Geodesy is:
   a) By Tachometry method
   b) Hand navigation GPS method
   c) By using the dumpy or spirit leveling equipment and a millimetric staff
   d) By using a theodolite and measuring tape
8. The element in Aerial photo restitution are called:
   a) Designing elements
   b) Point restitution elements
   c) Digital orientation elements

d) Orientation elements

9. Calculate the bearing and distance of line A – B given the coordinates of the two points as follows:

Point	X	Y
A	254.21	256.32
B	334.25	356.25

a) Bearing A – B = 40.342grd; Distance A – B = 135.175m

b) Bearing A – B = 45.45grd; Distance A – B = 150.32m

c) None of the mentioned value

d) Bearing A – B = 235.231grd; Distance A – B = 140.22m

10. From a field observation, the following observation were recorded, calculate the angle BAC

A	B	311.25rd
	C	25.24rd

a) Angle ABC = 186.010^{grd}

b) Angle ABC = 286.010^{grd}

c) Angle ABC = 121.990^{grd}

d) Angle ABC = none of the above

11. A cadastral is drawn to a non-conventional scale of 1/1260 and you are required to carry out measurements on the map with a conventional scale of 1/1000. What will be your convention factor

a) Multiplication factor = 1.35

b) Multiplication factor = 1.50

c) Multiplication factor = 1.26

d) Multiplication factor = 0.76

12. In a triangulation project, the following measurements are always taken.

a) 1 angle 2 distances
b) 2 angles 2 distances
c) 3 angles and 2 distances
d) 1 distance and 3 angles

13. An analogue theodolite can be used to carry out the measurements
a) Angle and distance
b) Distance only
c) Angles and bearings
d) None of the above

14. You are given a vertical angle of 129.11grd and a distance of 50.15m what is the vertical distance?
a) Vertical distance = - 25.01
b) Vertical distance = - 10.69
c) Vertical distance = -22.14
d) Vertical distance = +12.9015.

15.

From	To	Observed angle
A	B	389.71
	C	378.70
	D	250.70
	E	25.00

In a raying traverse, the following angular observation were made as shown above. Calculate the following angles

i. Angle BAC =
a) 11.99grd
b) 12.99grd

c) 300.99g
d) 388.99grd

ii. Angle BAD =
a) 139.99grd
b) 260.99grd
c) 39.30grd
d) 60.99grd

iii. Angle CAE =
a) 139.99grd
b) 260.99grd
c) 46.30grd
d) 60.99grd

iv. Angle EAB =
a) 35.29grd
b) 364.71grd
c) 164.71grd
d) 235.29grd

v. Angle EAC =
a) 115.21grd
b) 349.01grd
c) 249.01grd
d) None of the above

16. Orthophotographs are:
a) Geospatially arranged photographs
b) Geospatially corrected photographs
c) Photographs collected from aerial cameras
d) Images downloaded from satellites