C20-AA–**304**

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BOARD DIPLOMA EXAMINATION, (C-20)

OCTOBER/NOVEMBER—2023

DAA – THIRD SEMESTER EXAMINATION

SURVEYING

Time : 3 hours] [*Total Marks* : 80

PART—A 3×10=30

Instructions : (1) Answer **all** questions.

(2) Each question carries **three** marks.

(3) Answers should be brief and straight to the point and shall not exceed five simple sentences.

1. State the classification based upon the instruments used in surveying.

2. Draw neat sketches of ideal, well conditioned and ill conditioned triangles.

3. The length of a line was found to be 700 m when measured with 20 m chain. If the chain is 20 cm long, then find out the correct length of line.

4. State the errors due to external influence of compass surveying.

5. Convert the following whole circle bearings to the quadrantal bearings : 1+1+1=3

(a) 80° – 30′

(b) 222° – 00′

(c) 315° – 00′

6. Define the term 'level surface'.

7. Mention any six parts of a dumpy level.

8. State the function of theodolite.

9. Define the term 'Face left observations' in theodolite.

10. State the components of total station in surveying.

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PART—B   8×5=40

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Instructions : (1) Answer **all** questions.

(2) Each question carries **eight** marks.

(3) Answers should be comprehensive and criterion for valuation is the content but not the length of the answer.

11. *(a)* Explain the method of setting out right angles with cross staff.

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(OR)

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(b) The following offsets are taken from a survey line to a hedge :

Distance (m)	0	5	10	15	20	25	30	35	40
Offset (m)	3·29	4·05	6·23	5·75	4·76	5·26	4·32	3·92	2·91

Find the area between the survey line and the hedge by *(a)* Trapezoidal rule and *(b)* Average ordinate method.   5+5=10

12. *(a)* Draw a neat sketch of Prismatic compass and name its various parts.

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(OR)

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(b) The following bearing was taken of a closed traverse ABCD. Calculate the interior angles of the traverse.

Line	Fore Bearing	Back Bearing
AB	60°30'	240°30'
BC	122°00'	302°00'
CD	46°00'	226°00'
DA	205°30'	25°30'
EA	300°00'	120°00'

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13. *(a)* State the equipment required for carrying out levelling by dumpy level and explain the function of each.

(OR)

(b) The following readings were successively taken with an instrument in levelling work :

0·32, 0·53, 0·62, 1·78, 1·91, 2·35, 1·75, 0·35, 0·69, 1·24 and 0·98 m

The position of the instrument was changed after 3rd, 7th and 9th readings. Draw out the form of level book and enter the above readings properly. Assume the *R-L* of the 1st point as 81·53 m. Calculate *R-L* of all points and apply usual checks by the method of height of collimation.

14. *(a)* Explain the instrument errors present in theodolite surveying.

(OR)

(b) Explain the method measuring angles by reiteration method.

15. *(a)* Explain the procedure of measurement of distance with total station.

(OR)

(b) Explain the method of eye piece adjustments by using total station.

PART—C 10×1=10

Instructions : (1) Question No.16 is compulsory.

(2) The question carries **ten** marks.

(3) Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer.

16. Explain the precautions to be taken while using total station instrument.

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