Mark Scored:

KATHMANDU UNIVERSITY
End Semester Examination
February/March, 2019

Level : B. E.
Year : III

Course : CIEG 306
Semester: I

Exam Roll No. :

Time: 30 mins.

F. M. : 10

Registration No.:

Date FEB: 2 4 2019

SECTION "A"
[20 Q.× 0.5= 10 marks]

Choose the most appropriate answer among the given choice.

1. The volume of cement in one bag is
   a) 0.067 m^3 b) 0.050 m^3 c) 0.025 m^3 d) 0.033 m^3

2. The estimate of brickwork required in a wall 4m long, 3m high and 30 cm thick with rate Rs 320.00 per cum is
   a) Rs 1152.00 b) Rs 1172.00 c) Rs 1162.00 d) Rs 1142.00

3. Pick up the items of work included as the circulation area.
   a) Wall thickness b) Room area c) Verandah area d) Courtyard area

4. In the centre line method of working out volumes, for cross walls, what deductions must be made from the centreline length at each junction?
   a) Twice the breadth b) Breadth
   c) Half the breadth d) 1.5 Breadth

5. A document containing detailed description of all the items of work (but their quantities are not mentioned) together with their current rates is called
   a) Tender b) Analysis of rate c) Schedule of rates d) Abstract estimate

6. Actual cost of construction plus certain profit is paid to the contractor. Such a contractor is known as
   a) Unscheduled contract b) Nominated contract
   c) Cost + percentage contract d) Work order

7. The capacity of a flushing cistern is normally
   a) 12 to 15 litres b) 20 to 25 litres c) 30 to 40 litres d) 1 to 5 litres

8. Due to change in price level, a revised estimate is prepared if the sanctioned estimate exceeds
   a) 2.0% b) 2.5% c) 4.0% d) 5.0%

9. The brickwork is not measured in cu m in case of
   a) One or more than one brick wall b) Reinforced brickwork
   c) Half brick wall d) Brickwork in arches

10. The volume of coarse aggregate required to make 100 m3 of 1:2:4 concrete is
    a) 84 m^3 b) 88 m^3 c) 92 m^3 d) 96 m^3

11. A layer of dry bricks put below the foundation concrete, in the case of soft soils, is called
a) Soling b) D.P.C. c) Shoring d) Superstructure

12. The covered area of the proposed building is 150 m^2 and it includes a rear courtyard of 5m × 4m. If the plinth area rate is Rs 1250/m^2.What is its cost?
a) Rs 1,87,500 b) Rs 2,12,500 c) Rs 1,62,500 d) Rs 3,75,000

13. The minimum size of the pipe connected to septic tank
a) 50 mm b) 150 mm c) 100 mm d) 200 mm

14. The quantity of earthwork calculated using prismoidal formula for 200 metre length for a portion of road in a uniform ground the height of banks at the two ends being 1.00 m and 1.60 m. The formation width is 10 metre and the side slopes 2:1. Assume that there is no traverse slope.
a) 3288 m^3 b) 3188 m^3 c) 3276 m^3 d) 3312 m^3

15. The area of side slopes of portion of bank for a length of 200m the height of banks at the two ends being 2.50mand 3.50 m and the ratio of side slopes 2:1.
a) 2684 m^2 b) 3684 m^2 c) 2584 m^2 d) 3584 m^2

16. In what units are the quantities for the frames of doors and windows computed
a) m b) m^2 c) m^3 d) Lump-sum

17. The technique of finding the fair price of an existing power house building or property is known as
a) Estimation b) Valuation c) Pricing d) Costing

18. The value of the property (after being dismantled) at the end of the useful life period is
a) Scrap value b) Salvation value c) Book value d) Junk value

19. If the payment of annuity begins after some years in future, it is known as
a) Deferred annuity b) Readjusted annuity
c) Delayed annuity d) Regulated annuity

20. The capitalised value of a property fetching a net annual rent of Rs 1,000.00 and the highest rate of interest prevalent being 5% is
a) Rs 20,000 b) Rs 50 c) Rs 3000 d) Rs 2000

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Level : B.E.
Year : III
Time : 2 hrs. 30 mins.

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Semester : I
F.M. : 40

SECTION "B"
[4Q. × 4 =16 marks]

Attempt *ALL* questions. Assume suitable data if necessary.

1. Explain straight line method of calculating depreciation. An old building has been purchased by a person at a cost of Rs 30,000.00 excluding the cost of land. Calculate the amount of annual sinking fund at 4% interest assuming the future life of the building as 20 years and the scrap value of the building as 10% of the cost of purchase. [2+2]

2. Write short notes on [1+1+1+1]
   a) Plinth area estimate
   b) Bar bending schedule
   c) Abstract of an estimate
   d) Detailed specification

3. A coloniser intends to purchase a land of 100,000 sq m area located in the suburb of a big city to develop it into plots of 700 sq m each after providing necessary roads and parks and amenities. The current sale price of small plots in the neighbourhood is Rs 30.00 per sq m. The coloniser wants a net profit of 20%. Workout the maximum price of land at which the coloniser may purchase the land. Assume 30% area for road, parks etc. and assume following expenses. [4]
   i. Cost of improving of land levelling and dressing @Rs. 0.25 per sq. m.
   ii. Cost of providing metalled road drainage, water supply and electrification @ Rs 3.00 per sq m of whole land
   iii. Engineers and Architects fees for surveying planning, subdividing and supervising @3% on the sale price
   iv. Other miscellaneous expenses @1% on the price
   v. Colonisers profit @20% on the sale price

4. What are the factors affecting rate analysis? Calculate the quantities of materials required for 10 m^3 brick masonry (1:4). [1+3]

SECTION "C"
[4Q. × 6 = 24 marks]

Attempt *ALL* questions. Assume suitable data if necessary.

5. Prepare a preliminary estimate of a four storyed office building having a carpet area of 3000 sq. m for obtaining the administrative approval of the Government given the following data. It may be assumed that 30% of the built up area will be taken up by the corridors verandahs, staircases etc., and 10% of the built up area will be occupied by walls. Given that- [6]
   Plinth area rate is – Rs 950.00 sq. m
   Extra due to deep foundation at site - 1% of the building cost
   Extra for special architectural treatment - 0.5% of the building cost
   Extra for water supply and sanitary installations - 6% of building cost
   Extra for electric installations - 12.5% of building cost
   Extra for other services – 5% of building cost
   Contigencies - 2.5%
   Supervision charges- 8%

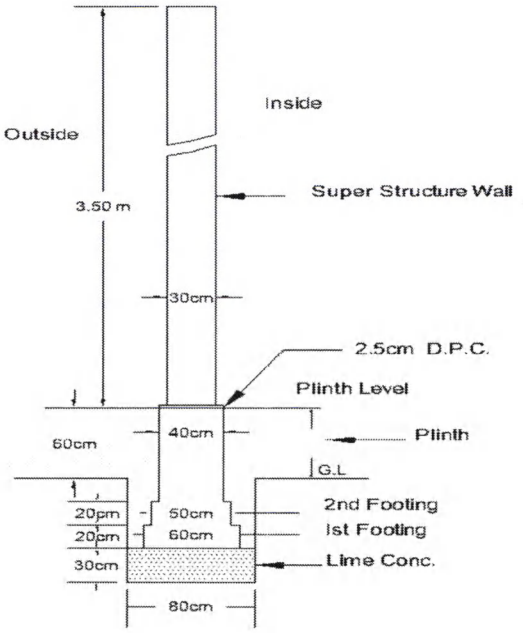
6. Differentiate between [2+2+2]
   a) Leasehold and Freehold property
   b) Mid and Mean sectional area method of earthwork
   c) Value and Cost

7. Reduced level (R.L.) of ground along the centre line of a proposed road from chainage 10 to chainage 20 is given below. The formation level at the 10th chainage is 107 and the road is in downward gradient of 1 in 150 up to the chainage 14 and then the gradient changes to 1 in 100 downward. Formation width of road is 10 metre and side slopes of banking are 2:1 (Horizontal: Vertical). Length of the chain is 30 metre. Draw longitudinal section of the road and a typical cross section and prepare an estimate of earthwork. [6]

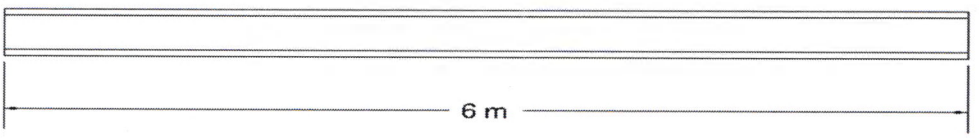
Chainage	10	11	12	13	14	15	16	17	18	19	20
R.L. of Ground (m)	105.00	105.60	105.44	105.90	105.42	104.30	105.00	104.10	104.62	104.00	103.30

8. Calculate the quantities of following items from following figures. Assume 20 cm height/ depth from second footing to ground level [2+2+1+1]
   a) Earthwork in excavation of foundation
   b) 1st class brickwork in lime mortar in foundation and plinth
   c) 2.5 cm damp proof course
   d) First class brickwork in lime mortar for superstructure

FEB 2 4 2019



CROSS SECTION



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