APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Scheme for Valuation/Answer Key

Scheme of evaluation (marks in brackets) and answers of problems/key

SEVENTH SEMESTER B.TECH DEGREE EXAMINATION (S), MAY 2019

Course Code: CE409

Course Name: TRANSPORTATION ENGINEERING - II

Max. Marks: 100 Duration: 3 Hours

PART A

Answer any two full questions, each carries 10 marks.

			Marks
1	(a)	Any four type – ***1 marks x 4no's***	(4)
	(b)	Analysis ***(3 marks)*** ; fill blanks***(3 marks)***	(6)
2	(a)	Report of work (Description of site, objective of wok, necessity of work, time of execution etc.....), Specification(General and detailed, drawings, calculation and design, analysis of rate (if not from the standard source), contract conditions ***(Any FIVE relevant document name-give full marks)***	(6)
	(b)	OVERHEAD COST- Establishment (office staff) ; stationary, printing, postage etc.,; Travelling expense; Telephone; Rent and taxes; Supervision (salary of engineers, overseers, etc) ;Amenities of labour etc.. ***(2 marks)*** 15% ***(2 marks)***	(4)
3	(a)	Explanation Materials required, quality , mixing, laying, maintaining levels,no vertical joints, stoppage of work after days work , curing point wise 1 mark	(10)

PART B

Answer any two full questions, each carries 25 marks.

4 Quantities Items 5 marks each+5 mark for format and neat presentation

5 Concrete quantity 5 marks |BBS table 3 marks each bar type 4 marks each – total steel quantity 5

6 Any 5 items 4 marks each, neat presentation and format 5 marks

PART C

Answer any two full questions, each carries 15 marks.

7	a	5 Purposes	5
	b	4 methods each 2.5 marks each-constant rate, constant percentage, sinking fund+any one	10

8 a explain the methods-2 each 8

b Sinking fund coefficient for 70 years $I_c = \frac{i}{(1+i)^n-1} = \frac{0.06}{(1+0.06)^{70}-1} = 0.001$ 7

An amount of Re.1 per annum in n years = $\frac{(1+i)^n-1}{i}$

An amount of Re.1 after 15 years = $\frac{(1+i)^{15}-1}{0.06} = 23.25$

Therefore, Rate of Depreciation in 15 years = 0.001 x 23.25 = 0.02325 or 2.352%

Total depreciation in 15 years on Rs. 80,000 = 80000 x 2.325/100 = Rs. 1860.

9 a. **Net return per annum** 9

On building cost@9% = Rs.2,50,000 x 0.09 = Rs. 22,500/-

On the cost of land @8% = Rs. 50,000 x 0.08 = Rs. 4000/-

Total net return per annum = Rs. 26,500/-

Outgoings

scrap value considered @ 10% of cost of building = 2,50,000 x 0.10 = Rs. 25,000/-

Sinking fund = 3,25,000 – 25,000 = Rs. 3,00,000/-

Annual sinking fund required for 60 years

$$I = \frac{Si}{(1+i)^n-1} = \frac{30000 \times 0.06}{(1+0.06)^{60}-1} = 570$$

Annual repairs @1.5% of construction cost = Rs. 2,50,000 x 0.015 = Rs. 3750

Other outgoings 28% of net return = 0.28 x 26,500 = Rs. 7420

Total outgoings = Rs. 11,740

Standard rent = net return + outgoings

= 26,500 + 11,740

Standard rent per annum = Rs. 38,240/-

Standard rent per month = Rs. 3186.67/-

b. Each definition 1.5 marks each 6

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