APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
Scheme for Valuation/Answer Key
Scheme of evaluation (marks in brackets) and answers of problems/key
EIGHTH SEMESTER B.TECH DEGREE EXAMINATION, MAY 2019
Course Code: CE404
Course Name: CIVIL ENGINEERING PROJECT MANAGEMENT

Max. Marks: 100   Duration: 3 Hours

PART A
Answer any two full questions, each carries 15 marks.   Marks

1 a) Explanation of steps such as Conception, Preliminary Design, Feasibility, DPR,   (8)
Tendering..... Completion. The different stages could be presented in different
formats.

   b) Resources code – use (2 marks)   (7)

      Manpower, materials, equipment and other direct resources code (5 marks)

2 a) Any three advantages of networks over bar charts   (5)

   b)

Activity	Expected time (t_e)	Variance (σ^2)	(10)
A	4.83		
B	5.83	1.36	
C	4.67		
D	6.33	1.0	
E	5.83		
F	6.83	2.25	
G	4.83		
H	8.16	2.25	

Network (AoA/AoN) (2 marks)

Expected time for each activity (1/4 marks × 8 values=2 marks)

Expected project completion time = 27.15 days = 28 days (2 marks)

Variance = 6.86 (2 marks)

Critical Path B-D-F-H (2 marks)

3 a) Network (AoA/AoN) (2 marks)   (15)

      Before crashing:

      Total project duration: 18 weeks (1 mark)

Critical Path: A-C-E (1 mark)

Total Project Cost (direct cost + indirect cost) = Rs.91,700 (2 marks)

Crashing is to be done for 5 days to get the minimum cost. Activity C is crashed for the first three days, and activity E is crashed for the next two days. On the sixth day, activities A and B may be crashed, but minimum cost occurs on the 13th day (Entire crashing process: 5 marks)

After crashing:

Minimum Cost = Rs. 84,950 (2 marks)

Optimum duration = 13 weeks (2 marks)

Preferably indicated with a graph of time vs. cost.

PART B
Answer any two full questions, each carries 15 marks.

4 a) Any 7 claims with proper description (7)

   b) Any three advantages of arbitration (4 marks) and any three disadvantages of arbitration (4 marks) (8)

5 a) Direct cost = direct materials cost + direct labour cost + other direct expenses (Explain each) (6 marks) (7)

   Graph showing the behaviour pattern (1 mark)

   b) Any 4 problems with proper explanation (2 marks each) (8)

6 a) Mention at least five (5 marks) (5)

   b) Explanation (5 marks) (5)

   c) Architectural components: Hardware, software (2.5 marks), Infrastructure components: operators, functions (2.5 marks) (5)

PART C
Answer any two full questions, each carries 20 marks.

7 a) Any five functions (5 marks) (5)

   b) EOQ – explanation (3 marks) (5)

   Formula with terms explained (2 marks)

   c) ABC analysis – steps explained (10 marks) (10)

8 a) Any two types of contract (2 x 5 marks) (10)

    b)   EMD – differences such as what is each, why each is collected, from whom it is   (5)
          collected and when each is collected (5 marks)

    c)   Measurement book – use of M book (3 marks)   (5)
          Format of M book (2 marks)

9 a)   TQM – explanation (10)   (10)

    b)   Discussion on any 10 measures to ensure safety (10)   (10)

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