

BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE, PILANI
SECOND SEMESTER 2017 – 2018

CONSTRUCTION MANAGEMENT – Comprehensive Exam - Makeup

Course No: CE G527

Date: 17-05-2018 [6 PM start]

Duration: 180 Mins (Closed book)

Max. Marks: 70

I: Choose the best answers:

[15 x 1=15]

1. Often, claims result from a disagreement on the meaning of the terms of the contract (True/False)
2. Project cost does not include escalation charges (True/False)
3. Construction cost index, often used in the preparation of cost estimates, is not a location specific parameter (True/False)
4. The difference between the original baseline budgeted cost and estimate at completion is termed as _____.
5. HVAC comes under the category of _____ civil works as per code provisions (True/False).
6. Quotes are meant to make an offer at a guaranteed price (True/False).
7. Engineer's estimate is prepared on the basis of a rough analysis of materials and equipment without involving labour (True/False)
8. The capitalized value is also called value of that property (True/False)
9. Rental method of evaluation is often used for big premises like flats, hotels, and hostels from which income can be produced or likely to be produced from the property. (True/False)
10. Aluminium has better crash energy absorption potential than steel (True/False)
11. Generally, the quoted rate of excavation shall not include excavation of slopes to prevent falling in soil by providing bracing. (True/False).
12. The common risk associated with the construction of roads is _____
13. BOT stands for _____
14. The rent meant for the office premises can be considered to be Fixed Overhead Cost (True/False)
15. Bid Price Factor is the ratio of _____ and _____

II: Short answers

[15 x 2 = 30]

- 1) What is the difference between cast iron and wrought iron?
- 2) What is meant by liquidated damages?
- 3) What is meant by supplies?
- 4) What is meant by project work-breakdown methodology?
- 5) What is the functional classification of contractors?
- 6) Can you list down construction participants in any construction project?
- 7) What is meant by "tribunal" with respect to arbitration?
- 8) Briefly explain "indirect accident costs".
- 9) What is meant by building cost index?
- 10) What is the basic objective of land ceiling act?
- 11) What is meant by "pointing" in masonry construction?
- 12) What is the advantage of finance-based scheduling?
- 13) What is the advantage of doing work by the mode of departmental labour?
- 14) What are the factors affecting production efficiency?
- 15) Briefly explain agile project management.

III: Long answers:

[5+15+10+5]

- 1) A company decides to invest Rs. 1,00,000 for a project which is expected to give a total return of Rs. 3,00,000 over the period of 4 years. The discount rate is 7%. What is the best distribution to invest?
- 2) A large storage tank consists of 400 steel plates, which, at Rs. 2000 each, gives a material cost of Rs. 8,00,000 (for simplicity, other material costs have been ignored). The duration for erecting and testing is six weeks. The labour man-hours are 1200 hours at a cost of Rs. 75/hour. Again, for simplicity, plant costs (cranes and welding sets) are regarded as site overheads and can be ignored. All the plates arrive on site on day 1 and have to be paid for on day 28. By day 7 (1 week later), 60 plates have been erected and welded. The EV calculations are carried out weekly and the time sheets show that after the first week, the men have booked a total of 200 man-hours. The production bonuses (5%) for every week (as agreed with unions) only starts at 97% efficiency. However, at the end of 28 days, 300 plates have been erected and the total man-hours booked to date are now 850. Determine the efficiency (CPI) and Earned Value at both the dates (7 days and 28 days). Also determine the cost involved at the end of 7 days and 28 days. If a tank contractor is to be paid weekly for the work (erection and welding), determine the labour cost, materials cost and the total payment at the end of week one.
- 3) Make computations for the value of a premises consisting of an office block let for Rs. 400 per month inclusive of all taxes and electric charges up to Rs. 50 per month. The office block was constructed only few months back and is in very good condition. The rent is fair as compared to other buildings in the locality.
- 4) A contractor who had employed 200 men, for 50 weeks, extracting work for 40 hours, a week on certain site had 10 disabling injuries. What is his injury frequency rate? Also, calculate injury severe rate if these injuries had resulted in a loss of total 90 days from work. Also, calculate injury index.