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**Presidency University**

**Bengaluru**

 **SCHOOL OF ENGINEERING**

**MAKE-UP EXAMINATION JULY 2024**

**Semester**: Semester V

**Course Code**: CIV3038

**Course Name**: Construction Economics & Finance

**Program** : B.Tech

**Date**: 02 JULY 20241

**Time**: 09:30AM – 12:30PM

**Max Marks**: 100

**Weightage**: 50%

 **Instructions:**

1. *Read the all questions carefully and answer accordingly.*
2. *Do not write any matter on the question paper other than roll number.*
3. *Scientific Calculators are permitted.*

**Part A [Memory Recall Questions]**

 **Answer Any 3 Questions. Each question carries FIVE marks. (3Qx 5M= 15M)**

1. Define Economic equivalence. At 10% interest, what is the equivalent worth of ₹2500, 5 years from now? (C.O.No.1) [Knowledge] 2. Define Break-even point and construct a break-even chart. (C.O.No.2) [Knowledge]

3. Define Breach of a contract and discuss its types? (C.O.No.3) [Knowledge]

4. List any five unfair contract terms. (C.O.No.3) [Knowledge]

**Part B [Thought Provoking Questions]**

 **Answer any 4 Questions. Each question carries TEN marks. (4Qx10M=40M)**

5. There are several techniques that a manager can employ while making decisions. The quantitative techniques enable managers to take decisions objectively and efficiently. These techniques rely on a scientific and statistical approach to make good decisions. Explain the various quantifying alternative techniques of decision making. (C.O.No.1)[Comprehension]

6. Cost of Ownership is the overall cost of a product or service throughout its life cycle. This calculation method takes into account both direct and indirect costs. With regard to the above, calculate the ownership cost and the cost of maintenance of an equipment at an hourly rate for the following data: (C.O.No.1)[Comprehension]

• Purchase Price - ₹500,000

• Salvage value - ₹50,000

• Useful life - 10 years

• Working hours per year - 2500 hours

• Annual maintenance cost - 8% of purchase price

• Annual operating cost - ₹30,000

• Interest rate - 10%

7. Inflation is the rate of increase in prices over a given period of time. It is typically, an overall increase in prices that leads to the increase in the cost of living in a country. Based on the rise in economy, explain the different types of inflation. Also, write the pros and cons of inflation. (C.O.No.2) [Comprehension]

8. A tender (also known as an invitation) is a written request sent out to potential suppliers allowing them to submit an invitation to bid to deliver specific goods or services. Based on your understanding, what are the different types of Tenders and write in brief the processes involved in tendering? (C.O.No.3) [Comprehension]

9. A dispute resolution in construction contracts is vital because it prevents potential legal action. There are various methods to resolve the issues in Construction. Discuss the different causes of disputes in construction Projects and also explain the different methods of Dispute resolution. (C.O.No.3) [Comprehension]

**Part C [Problem Solving Questions]**

 **Answer Any 3 Questions. Each question carries FIFTEEN marks. (3Qx15M=45M)**

10. A shovel fitted with 150hp motor used in digging operation has a purchase price of $200000. The estimated salvage value for the equipment is $50000 after its expected useful life of 5years. The interests assumed for Borrowing money is 10%, Risk is 6% and Tax, insurance and storage is 2%.

During its operating cycle of 30 sec, the engine is operated at full power while filling the bucket in tough ground, requiring 6sec. During the balance of the cycle, the engine is operated at 50% of its rated power and the shovel is operated only for 45 min per hour. The capacity of crankcase is 5 gallons and the oil has to be changed every 100 hours. Assuming that the engine consumes gasoline fuel of approximately 0.06 gallons for each hp developed, determine

1. MARR value (ii) Annual Ownership cost,

(iii) Operating cost of the fuel and (iv) Operating Cost of lubricating oil (C.O.No.2) [Application]

11. AhmadUllah & Company purchased a factory machine of Rs. 180,000 on January 1, 2012. The machine is expected to have a salvage value of Rs. 20,000 at the end of its 4 year useful life. During the useful life, the machine is expected to be used for 160,000 hours. The machine was used as under: (C.O.No.2) [Application]



Prepare Schedule of Depreciation on the basis of following methods:

(a) Straight Line Method (3)

(b) Units of Output Method (4)

(c) Double decline Balance method and (4)

(d) Sum of Year Digit Method (4)

12. During the execution of the project, there is a high chance that the contractor fails to satisfy the client due to differing expectations and aims, eventually leading to conflicts. This may lead to claims made by the client under contract who has incurred losses during the process. Discuss the different types of Construction Claims and their causes. (C.O.No.3) [Application]

13. Any disagreement or problem may arise during the formation or performance of the contract. The contract issue could be something as small as a misunderstanding about the terms of the agreement, or it could be something much larger, such as one party not holding up their end of the bargain. Discuss on different Contract issues that one might while working on a construction project. (C.O.No.3) [Application]