ME Civil (CEM) / Sem II / Choice Based / Second Half 2018

Paper / Subject Code: 33203 / Project Economics & Financial Management

22/11/201

Q.P. Code: 25840

80 Marks **3 Hours**

Note: **1. Attempt any 4 Questions** **2. Assume suitable data, if required**
3. Figures to the right indicate marks **4. Attempt sub questions in order**

1. a) A contractor has to take a decision whether to bid for a construction project or not. The decision criteria is based on NPV. The project worth is ₹ 1200 crores to be completed in 5 years. Based on the tender conditions and the company policy, following information is generated: **[14]**

i. Mobilization Advance: 18% of project worth. Mobilization Advance will be deducted in 3 equal installments, starting from the first year

ii. C.E Advance: 10% of project worth. It will be deducted in 2 equal installments starting from the 2nd year

iii. Material cost component of the project is 40%. Secured advance against materials brought to site is 60% of the material cost. Secured Advance is accounted in proportion to the yearly bill payable to the contractor. Secured Advance will be deducted in 3 equal instalments from the running bills starting from the 2nd year

iv. Contractor has to pay 3% as Performance Security in the beginning and 3% Retention amount, which are deductable from each running bill. Performance Security will be released after the end of the project during the 6th year and retention amount will be released in the 7th year at the end of defects liability period.

v. the yearly bills payable to the contractor including the retention amount are as follows:

Year	Amount (in crore ₹)
1	300
2	400
3	500
4	280
5	120

vi. Net profit from the above project before deduction of taxes is 15%. Profit is accounted yearly in proportion to the bill amount

vii. Income tax is charged at 12%. Working capital required to be raised is estimated at 8%. Working capital may be divided in the proportion of yearly bill. Interest on the working capital is 12% (simple interest). Repayment of working capital is to be considered in the 6th and 7th year together with its simple interest

viii. Consider the cost of capital as 14%

ix. Estimated cost of the defects arising during d.l.p is 1% of the project worth

Prepare a cash flow statement for the contractor over the 7 year period. Represent the total yearly inflows and outflows w.r.t time graphically and identify whether additional funds may become necessary. Based on NPV, suggest whether the investment in the above project is feasible or not.

b) Explain CIDC-ICRA grading system of construction entities **[06]**

2. Answer the following (any 4): **[20]**

a) Escrow Account
b) Over and Under Capitalization
c) Working capital cycle
d) Mergers and acquisition with examples
e) Profit and loss account statement

3. a) The cost of machine A and B are ₹ 5,26,500 each. Estimated life of both machines is five years. Income generated form both machines is given in table below: [10]

Year No.	Project A in lakh ₹	Project B in lakh ₹
1	1,30,500	1,44,850
2	1,28,950	1,26,550
3	1,17,200	1,19,250
4	1,06,250	1,10,200
5	1,04,850	1,10,000

Find out

i. Average rate of return on A and B machines.
ii. Which machines is better from the point of view of payback period and why?
iii. Calculate average rate of return when salvage value of machine A turns out to be ₹ 10,000 and when B machine has zero salvage value.

b) Explain with an example, the technicalities involved in dealing with foreign exchange on a project having stakeholders from different nationalities [10]

4. a) Summarized below are the income and expenditure forecast for the months of July to December 2017. [10]

Month (all credit)	Sales (all credit)	Purchase	Wages	Manufacturing expenses	Office expenses	Selling expenses
	₹	₹	₹	₹	₹	₹
July	5,00,000	3,90,000	85,000	50,000	20,000	40,000
August	6,20,000	3,70,000	95,000	40,000	25,000	45,000
September	6,40,000	3,60,000	45,000	45,000	25,000	50,000
October	5,90,000	3,60,000	85,000	45,000	20,000	45,000
November	5,70,000	3,80,000	95,000	50,000	25,000	40,000
December	6,00,000	3,50,000	85,000	40,000	20,000	55,000

You are given the following further information:

i. Plant costing Rs. 3,60,000 is due for delivery, in November, payable at 10% on delivery and the balance after 3 months.
ii. Advance tax of ₹ 55,000 is payable in July and October each.
iii. Period of credit allowed by suppliers is 2 months and to customers is 1 month.
iv. Lag in payment of manufacturing expenses is ½ month.
v. Lag in payment of all other expenses is 1 month.

You are required to prepare a cash budget for 3 months staring on 1st September 2017, when there was a cash balance of ₹ 1,00,000

b) Innumerate the various ways in which the funds were raised from conception to completion of the Konkan Railway project. Discuss the hurdles faced and the solutions envisaged. Justify why the case study is an example of financial success.. [10]

5. Write Short notes on (any 4): [20]

a) Equity and Debt
b) ARR & IRR
c) Accounting ratios
d) Role of finance manager
e) Wealth maximization vs profit maximization

6. a) Explain How BOT is effective model for financing in bridge projects in India. [06]

b) The estimated cost of an expressway to be constructed on BOT basis between 2 megacities is ₹ 1300 crores. The project is to be completed in 4 years and the expected life of the project after vehicles start plying on it is 25 years; after which it needs to be scrapped off and replaced. The commissioning period for the contractor is 10 years, after which the project becomes government property. The contractor had taken a bridging loan of ₹ 500 crores (on simple interest of 12%p.a) at the start of the project which is to be repayed back between the years 6-10 of the project life cycle in equal yearly instalments. The cashflows at the end of each years are estimated as follows: [14]

Year No.	Construc-tion costs	Expected Toll to be collected	Expected Repairs and maintenance	Year No.	Expected Toll to be collected	Expected Repairs and maintenance
	In crore ₹	In crore ₹	In crore ₹		In crore ₹	In crore ₹
0				15	1050	300
1	300			16	960	330
2	350			17	970	360
3	390			18	980	390
4	260			19	990	420
5		800	115	20	1300	450
6		820	130	21	1015	490
7		840	145	22	1030	530
8		860	160	23	1045	570
9		880	175	24	1060	610
10		900	390	25	1375	650
11		910	210	26	1090	700
12		920	230	27	1000	750
13		930	250	28	900	800
14		940	270	29	750	700

Determine, based on NPV, whether the project is feasible for both the project parties. Also show the BEP of the project