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UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, Dec 2021

Course: **Project & Financial Management**   Semester: VII
Program: **B. Tech- EL**   Time 03 hrs.
Course Code: FINC 4001   Max. Marks: 100

SECTION A

1. Each Question will carry 4 Marks
2. Instruction: Complete the statement / Select the correct answer(s)

S. No.		Marks	CO
Q 1.	a) Costs associated with the design, planning, installation and commissioning of a project are known as _____ costs. b) If asset depreciation is considered, then net operating cash inflow would be _____ than the total revenue. c) The Internal Rate of Return is the discount rate for which the NPV is _____. d) For investment decision, ROI must always be _____ than the prevailing interest rate.	4	CO1

Q 2.	Explain the following:
	  1. Fixed Price Contract
	  2. Cost reimbursable contract
		4	CO1

Q 3.	A construction project costs Rs. 54 lakhs and Rs. 2 lakhs per year to operate and maintain. If the annual savings is Rs. 20 lakhs, the payback period will be _____ years.	4	CO1
Q 4.	For an activity in a project, Latest start time is 8 weeks and Latest finish time is 12 weeks. If the earliest finish time is 9 weeks, Slack time for the activity is ____.	4	CO2
Q 5.	The 'Expected Time' of an activity having 'Optimistic Time' of 15 Days, a 'Most Likely Time' of 18 days and a 'Pessimistic Time' of 27 days is _____ Days.	4	CO2

SECTION B

1. Each question will carry 10 marks
2. Instruction: Write short / brief notes

Q 6.	Illustrate the importance of a Detailed Project Report (DPR) along with its salient features. Use appropriate example of a turnkey project.	10	CO3
Q 7.	Explain the Project Management Life Cycle steps involved in the design & construction of a '10 MW Biomass based Thermal Power Plant'.	10	CO2
Q 8.	Appraise the importance of 'Project Risk Management'. What are the 6 major essential steps required for the effective implementation of **'Project Risk Management'**.	10	CO3
Q 9.	Calculate the net present value over a period of 3 years for a project with the following data. The discount rate is 12%.	10	CO3

Year	Investment (Rs.)	Savings (Rs.)
0	75000	
1		25000
2		75000
3	50000	75000
4		35000

OR

A company has got the following two energy saving project investment options:

Option A:
Investment envisaged is Rs. 40 lakhs with an annual return of Rs. 12 lakhs; life of the project is 5 years. Calculate IRR.

Option B:
A project having IRR of 12%

Analyze & compare the above 2 options & explain which option should the company select?

SECTION-C

1. Each Question carries 20 Marks.
2. Instruction: Write long answer.

Q 10.	A project activity has several components as indicated below:				

A project activity has several components as indicated below:

S. No	Activity	Preceded By	Duration in weeks
1	A	-	8
2	B	A	6
3	C	A	12
4	D	B	4
5	E	D	5
6	F	B	12
7	G	E & F	9
8	H	C	8
9	I	F & H	5
10	J	I & G	6

a) Prepare a PERT chart, estimate the duration of the project and identify the critical path.
b) Calculate the Earliest Start, Latest Start and Total Float of activity 'H'?
c) Analyze, what would be the project duration if activity 'H' got delayed by 3 weeks?

(marks: 20, CO4)

For the following tasks, durations, and predecessor relationships in the following activity table,

Activity Description	Immediate Predecessor(s)	Optimistic (Weeks)	Most Likely (Weeks)	Pessimistic (Weeks)
A	-	4	7	10
B	A	2	8	20
C	A	8	12	16
D	B	1	2	3
E	D,C	6	8	22
F	C	2	3	4
G	F	2	2	2
H	E,G	4	8	12
I	H	1	2	3

Using the PERT method,
  a) Draw the network
  b) Calculate expected time for all tasks
  c) Calculate variance for all tasks
  d) Analyze & determine all possible paths and their estimated durations
  e) Identify the critical path

Q 11.	A company has to choose between two projects whose cash flows are as indicated below; **Project 1:** i. Investment – Rs. 15 Lakhs ii. Annual cost savings – Rs. 4 lakhs. iii. Bi-annual maintenance cost (once in every 2 years)– Rs. 50,000/- iv. Reconditioning and overhaul (including maintenance) cost during 5th year: 6 lakh v. Life of the project – 8 years vi. Salvage value – Rs. 5 lakhs **Project 2:** vii. Investment – Rs. 14 Lakhs viii. Annual cost savings – Rs. 3.5 lakhs. ix. Annual Maintenance cost – Rs. 20,000/- x. Reconditioning and overhaul (including maintenance) cost during 4th year: 5 lakh xi. Life of the project – 8 years xii. Salvage Value- 2 lakhs Analyze & compare among the above 2 project options and confirm which among the 2 projects should the company choose? The annual discount rate is 12%.	20	CO4