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Subject	Construction Management.
Exam	Final Term
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Q No :: 01

Given Data:-

Number of communication channel = 6

Additional stake holder = 2.

Required Data:-

Identify the number of communication Channel after increasing the scope of work = ?

Solution:-

As we know that,

Number of communication channel = $\frac{n(n-1)}{2}$

The number of people involved in Six (6)

Communication Channel $\Rightarrow$

$$6 = \frac{n(n-1)}{2}$$

$$12 = n(n-1) = n^2 - n$$

$$n^2 - n - 12 = 0$$

$$n^2 - 4n + 3n - 12 = 0$$

$$n(n-4) + 3(n-4) = 0$$

$$(n-4)(n+3) = 0$$

$n - 4 = 0$ | $n + 3 = 0$

$n = 4$ | $n = -3$

So that the people involved = 4

$$n = 4 + 2$$

$$n = 6$$

Now the required communication Channel $= \frac{6(6-1)}{2}$

$$= \frac{6(6-1)}{2} = 3(5)$$

New Communication Channel = 15 Ans/-

QNO - 02

Given Data :-

For Project of 10 Package;
For each planned value ;
Actual cost and Percentage
of completion is given ;

Required Data

Calculate ;

* Earn value .
* Cost Variance
* Schedule variance.
* Cost Performance Index.
* Schedule Performance Index.

Work Package	BCWS P.V ($)	ACWP A.C ($)	% Progress	BCWP E.V ($)	Cost Variance	Schedule Variance	Cost Performance Index	Scedule performance Index.
1	100,000	120,000	100	100,000	-20000	0	0.83	1
2	100,000	1,0000	100	100,000	-10000	0	0.91	1
3	100,000	80000	90	90,000	10000	-10000	1.13	0.9
4	100,000	125000	80	80,000	-45000	-20000	0.64	0.8
5	100,000	75000	50	50,000	-25000	-50000	0.67	0.5
6	100,000	0	0	0	0	-100000	0	0
7	100,000	0	0	0	0	-100000	0	0
8	100,000	0	0	0	0	-100000	0	0
9	100,000	0	0	0	0	-100000	0	0
10	100,000	0	0	0	0	-100000	0	0

Comments :

On the basis of CPI :

According to Thumb Rules;

★ Work package 1, 2, 4 and 5 are over budget because CPI value in less than 100%

★ Work package 3 in under budget because CPI value is greater than 100 %.

On the basis of SPI :

According to Thumb rule;

★ Work package 1 and 2 are on schedule.

★ Work package 3, 4 and 5 are behind schedule.

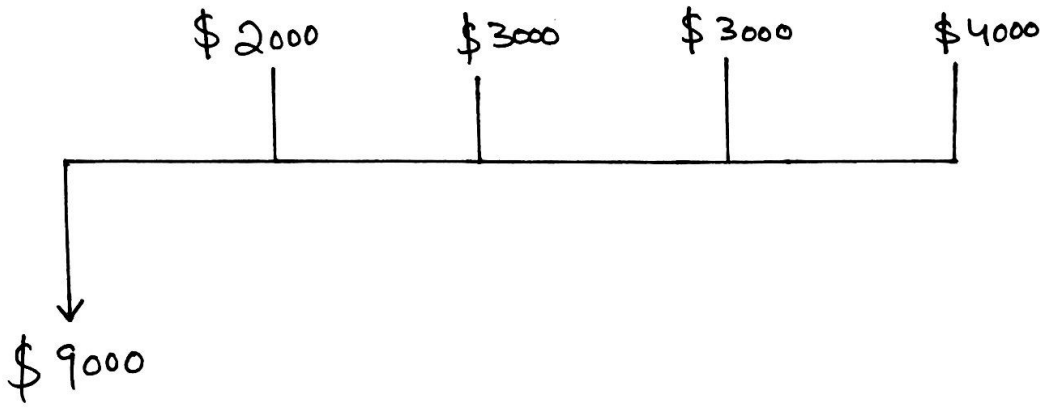
Q NO - 03

Given Data :-

⇒ Initial Investment = $9000

Discount rate = γ = 10 %

· Expected cash flow for next four year is :-



Required Data :-

Net Percent value = NPV = ?

Comments on the result =

Solution:-

$$Npv = -C_0 + \frac{C_1}{1+\gamma} + \frac{C_2}{(1+\gamma)^2} + \cdots\cdots + \frac{C_T}{(1+\gamma)^T}$$

$$P_{V0} = -C_0$$

$$P_{V_0} = -9000$$

$-C_0$ = Initial Investment

C = Cash flow

γ = Discount rate

T = Time

$C_1 = 2000$, $C_2 = 3000$

$C_3 = 3000$, $C_4 = 4000$

$$P_{V_1} = \frac{C_1}{1+\gamma}\left(\frac{2000}{1+\frac{10}{100}}\right)$$

$$\boxed{P_{V_1} = 1818.18}$$

$$P_{V_2} = \frac{C_2}{(1+\gamma)^2} = \frac{3000}{(1+\frac{10}{100})^2}$$

$$\boxed{P_{V_2} = 2479.34}$$

$$PV_3 = \frac{C_3}{(1+r)^3} = \frac{3000}{\left(1+\frac{10}{100}\right)^3}$$

$$\boxed{PV_3 = 2253.94}$$

$$PV_4 = \frac{C_4}{(1+r)^4}$$

$$PV_4 = \frac{4000}{\left(1+\frac{10}{100}\right)^4}$$

$$\boxed{PV_4 = 2732.05}$$

$$NPV = -C_0 + \frac{C_1}{1+r} + \frac{C_2}{(1+r)^2} + \frac{C_3}{(1+r)^3} + \frac{C_4}{(1+r)^4}$$

$$= -9000 + 1818.18 + 2479.34 + 2253.94 + 2732.05$$

$$\boxed{NPV = \$283.51}$$

Comments :-

⇒ A positive NPV mean the Combined PV of all Cash inflow exceed the PVe of cash out flow.

⇒ In our Example the NPV of 283.51 suggest that the Combined PV of all Cash inflow exceed the PV of cash outflow by $ 283.51.

QNO - 04

		Level of Interest	
		Low	High
Power	Low	A Minimal effort	B Keep informed.
	High	C Keep Statisfied	D Key Player

Power / Interest Matrix :-

⇒ Stake holder in group A :-
Need only minimium effort on monitoring.

⇒ Stake holder in group B :-
Should be keep as They may be able to influnece more powerful stake holders.

⇒ Stakeholder in group C :-

They are powerful but level of interest is low. Generally expected to be Possive, but many move to group D on an issue of Particular interest.

⇒ Stakeholder in group D :-

They are both Powerful and interested. The Co-operation is of key importance for new Stratagies.

Q No - 5

The different stages to be considered in the risk Managment Check list for a project of Residented houses are :-

Stage 1 (Initiation) :-

→ Assemble Risk management resources. Appoint the team leader and ensure a breadth of skills/Experience with in team.

→ Assign Risk management Responsability appropriate to task.

Stage - 2 (Proposal Familiarization).

→ Specific objection & Coiteria.

→ Familiase the team with in Proposal assembled Documentation and define the key Objective.

→ Access the proposal in relation to Agency's objective and Strategies.

→ Determine Assessment criteria for proposal.

→ Define key element (target 20-50 element, item or activities) to structure risk analysis.

Stage - 3 (Risk ~~Response~~ Analysis. ~~Planning~~):-

→ Identify risk

→ Prepare comprehesive schedule of risk for each element.

→ Assess risk likelihoods and Consequencess.

→ Identify Significant risk.

→ Identify major risk.

→ Identify Major risk for detailed risk action planning.

Stage 4 (Risk Respons planning)

→ Identiog feasible responses.
- For each moderate and major risk, identiog the feasible responses.

→ Describe each feasible response and list main assumption.

→ Select other best response.

→ Develop management measures and action schedules.

→ Specify risk management measures for moderate risk.

stage 5:- Reporting

→ For designated proposal, produce the risk management plan.

→ For other project; collate and summarize risk action schedules and measures.

stage 6:- (Risk Management Implementions)

→ Implemente measures and action strategies.

→ Monitor the Implementation.

- Assign responsibilities.
- Timing.

→ Undertake periodic review and performance evaluation.