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Question # 1

Solution ;

Given data ;

Communication channel = 6

Additional stakeholder = 2

Required ;

Number of communication
channel Now = ?

As we know that from given
below formula of channel,

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

The number of people involved
in 6 communication channel.

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

2

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

$$n^2 - n = 12$$

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

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

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

Take n common from first pair and 3 from 2nd pair,

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

Now take $n-4$ common as whole,

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

$$n-4 = 0 \quad \text{or} \quad n+3 = 0$$

$$n = 4 \quad n = -3$$

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Number of people cannot negative,

So number of people involved
= 4

As there are two additional
stakeholders

So total number of people ;

$$n = 4 + 2, \quad n = 6$$

Now the required communication
of channels are given below

$$= \frac{6(6-1)}{2} = 3(5) = \underline{15}$$

Communication channel is equal
to 15.

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Question # 2

Solution ;

Earn Value ;

$$EV = PV \text{ to date} \times RP$$

$$(1) EV = 100000 \times \frac{100}{100} = 100000$$

$$(2) EV = 100000 \times \frac{100}{100} = 100000$$

$$(3) EV = 100000 \times \frac{90}{100} = 90000$$

$$(4) EV = 100000 \times \frac{80}{100} = 80000$$

$$(5) EV = 100000 \times \frac{75}{100} = 75000$$

Cost Variance ;

$$(1) CV = 100000 - 120000 = -20000$$

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$$(2) CV = 100000 - 110000 = -10000$$

$$(3) CV = 100000 - 80000 = 20000$$

$$(4) CV = 100000 - 125000 = -25000$$

$$(5) CV = 100000 - 75000 = 25000$$

$$(6) CV = 100000 - 0 = 100000$$

$$(7) CV = 100000 - 0 = 100000$$

$$(8) CV = 100000 - 0 = 100000$$

$$(9) CV = 100000 - 0 = 100000$$

$$(10) CV = 100000 - 0 = 100000$$

Schedule Value ;

$$SV = EV - PV$$

$$(1) SV = 100000 - 100000 = 0$$

$$(2) SV = 100000 - 100000 = 0$$

6

$$(3) SV = 90000 - 100000 = -10000$$

$$(4) SV = 80000 - 100000 = -20000$$

$$(5) SV = 75000 - 100000 = -25000$$

$$(6) SV = 0 - 100000 = -100000$$

$$(7) SV = 0 - 100000 = -100000$$

$$(8) SV = 0 - 100000 = -100000$$

$$(9) SV = 0 - 100000 = -100000$$

$$(10) SV = 0 - 100000 = -100000$$

Cost Performance Index

$$CPI = EV/AC$$

$$(1) CPI = \frac{100000}{120000} = 0.83$$

$$(2) CPI = \frac{100000}{110000} = 0.90$$

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$$(3) \text{ CPI} = \frac{90000}{80000} = 1.125$$

$$(4) \text{ CPI} = \frac{80000}{125000} = 0.64$$

$$(5) \text{ CPI} = \frac{75000}{75000} = 1$$

$$(6) \text{ CPI} = \frac{0}{0} = 0$$

$$(7) \text{ CPI} = \frac{0}{0} = 0$$

$$(8) \text{ CPI} = \frac{0}{0} = 0$$

$$(9) \text{ CPI} = \frac{0}{0} = 0$$

$$(10) \text{ CPI} = \frac{0}{0} = 0$$

Schedule Performance Index

$$(1) \text{ SPI} = \frac{100000}{100000} = 1$$

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$$(2) \text{ SPI} = \frac{100000}{100000} = 1$$

$$(3) \text{ SPI} = \frac{90000}{100000} = 0.9$$

$$(4) \text{ SPI} = \frac{80000}{100000} = 0.8$$

$$(5) \text{ SPI} = \frac{75000}{100000} = 0.75$$

$$(6) \text{ SPI} = \frac{0}{100000} = 0$$

$$(7) \text{ SPI} = \frac{0}{100000} = 0$$

$$(8) \text{ SPI} = \frac{0}{100000} = 0$$

$$(9) \text{ SPI} = \frac{0}{100000} = 0$$

$$(10) \text{ SPI} = \frac{0}{100000} = 0$$

Estimate Completion ;

$$\text{BAC} / \text{CPI}$$

$$= 1000000 / 4.495$$

$$= 222469.4$$

Estimated time to complete ;

$$\text{ETC} = \text{original time}$$

$$\text{Estimate} / \text{SPT}$$

$$= 222469.4 / 4.45$$

$$= \underline{49993.123}$$

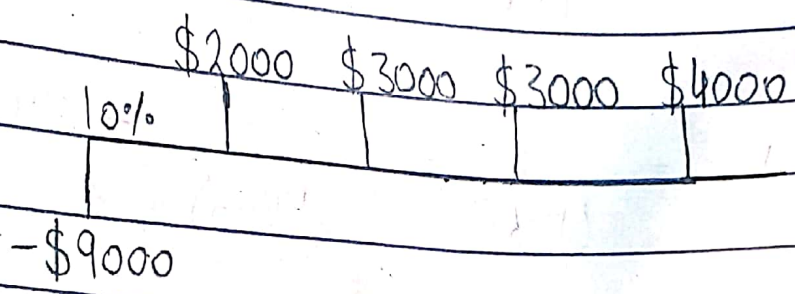
$$= \boxed{49993.123} = \underline{\underline{49993.123}} / \underline{\underline{55}}$$

$$= \underline{\underline{908}}$$

The project are Under budget .

Question # 3

Solution ;



Given data ;

$r_i = 10\%$

life time - 4 Year

Cash flow = 4 Year

Invest - $PV_0 = -9000 \$$

Required ;

Net Present Value - ?

As we know that ;

$$NPV = -C_0 + \frac{C_1}{1+r} + \frac{C_2}{(1+r)^2} + \dots + \frac{C_n}{(1+r)^n}$$

(1) $PV_0 = -C_0$

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$$PV = -9000$$

$$(2) PV_1 = \frac{C_1}{1X} = \frac{2000}{(1 \times 10/100)} = 1818.18$$

$$(3) PV_2 = \frac{C_2}{(1X)^2} = \frac{3000}{(1 \times 10/100)^2} = 2479.34$$

$$(4) PV_3 = \frac{C_3}{(1X)^3} = \frac{3000}{(1 \times 10/100)^3} = 2253.94$$

$$(5) PV_4 = \frac{C_4}{(1X)^4} = \frac{4000}{(1 \times 10/100)^4} = 2732.05$$

Now Put these values in main equation

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

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

$$= \underline{\underline{\$ 283.51}}$$

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Comments ;

A Positive NPN mean the combined PV of all cash in flow exceeds the PV of cash out flows.

So our example the NPN of \$ 283.51 suggest that the combined PV of all cash in flow exceeds the PV of cash out flows by 283.51 \$.

Question # 4

Answer ;

Being a Project Manager the following Power / interest matrix

The following rules should be considered

Stake holders in group A :

Need only minimum effort on monitoring.

Stake holders in group B :

Should be kept inform as they may be able to influence more powerful stake holders.

Stake holders in group C :

Are powerful, but level of interest is low. Generally expected to be passive, but may move into group D on an issue of particular interest.

Stake holders in group D:
 Are both powerful and interested. Their co-operation is of key importance for new strategies.

Power / Interest Matrix (Gardner et al (1988))

		Level of Interest	
		Low	High
Power	Low	A Minimal effort	B Keep informed
	High	C Keep satisfied	D Key players

Question # 5

Answer ;

The different stages to be considered in the risk management group for residential house are :

Checklist for Risk Management :

Stage 1 , Initiation

- (1) Assemble risk Management resources.
- (2) Appoint the team leaders & ensure a breadth of skills within the team.
- (3) Assign risk Management responsibilities appropriate to task.

Stage 2 , Proposal familiarization

- (1) Specify objectives & criteria
- (2) Familiarise the team with the proposal, assemble documentation & define the key objectives.
- (3) Assess the proposal in relation to the agency's objectives and strategies.

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(4) Determine assessment criteria for proposal.

(5) Define key elements (target 20-50 elements items or activities) to structure risk analysis.

Stage 3, Risk Analysis.

Identify risks,

(1) Prepare comprehensive schedule of risk for each elements.

(2) Describe each risk and list the main assumption.

Assess risk likelihood & consequences;

(1) Assemble data on risk and their consequences

(2) Assess risk like lihoods.

(3) Assess risk impacts.

Identify significant risk.

(1) Rank risk to reflect impacts & likelihoods.

(2) Where applicable, estimate risk factor.

(3) Discard / accept minor risk

(4) Identify moderate risk management measure.

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Identify major risk for detailed risk action planning.

Stage 4, Risk Response Planning.

Identify feasible response,

(1) For each moderate and major risk, identify the feasible response

(2) Response may include:

(a) Risk Prevention.

(b) Impact Mitigation.

(c) Risk transfer & Insurance.

(d) Risk acceptance.

(3) Describe each feasible response & list main assumption

(4) Select the best response

(5) Evaluate the benefits and cost for each response.

(6) Select the preferred response.