Final term Assignment/Quiz

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Q.No. (01)

Define the main types of Alternative dispute resolution (ADR) along with Arbitration Act 1996 section 1, section 9 and section 18? What are the advantage and disadvantages of ADR in terms of construction project?

Ans

- **Arbitration :**

Arbitration is the adjudication of a dispute by one or more specially-appointed experts or lawyers.

Arbitration involves an independent third party who actually makes suggestions and actually imposes a decision on the parties.

People who work as arbitrators often belong to the Chartered Institute of Arbitrators.

Arbitration is governed by the Arbitration Act 1996.

Arbitration is binding.

Arbitration Act -1996, s.1:

The object of arbitration is to obtain the fair resolution of disputes by an impartial tribunal (Equality) without unnecessary delay or expense;

The parties should be free to agree how their disputes are resolved, subject only to such safeguards as are necessary in the public interest…

Arbitration Act -1996 s.9

Where a party tries to ignore an arbitration clause agreed in a contract, the court in which he or she is trying to make his claim will order a 'stay' (i.e. a stop) of proceedings so that the matter may be referred to arbitration as agreed in the contract.

Arbitration Act 1996 s.18:

Parties are free to decide between themselves whom they will appoint as an arbitrator.

Where there is no agreement a party can apply to a court under the Arbitration Act 1996 s.18 to have one appointed by the court.

- **Mediation**

Parties in a dispute may refer their dispute to an independent third party who will act as a go-between.

Mediation involves an impartial third party who listens and directs discussion but does not suggest outcomes.

The mediator will help the parties discuss their dispute in order to try to settle it.

Mediation is not binding.

- **Conciliation**

Similar to mediation but the conciliator may suggest a way to settle to the dispute.

If parties in litigation refuse an offer of conciliation without good reason then even if they win their case, the judge can refuse to award them some or all of their legal costs.

Conciliation is not binding.

- **Negotiation**

Negotiation requires parties to bargain without outside assistance, exchanging compromises to reach a solution. In this approach parties can begin bargaining discussions at the beginning of a dispute without the presence of legal representation.

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Like mediation, settlement discussions within a negotiation context are controlled entirely by the parties. Negotiation is also not binding.

Q.No. (02)

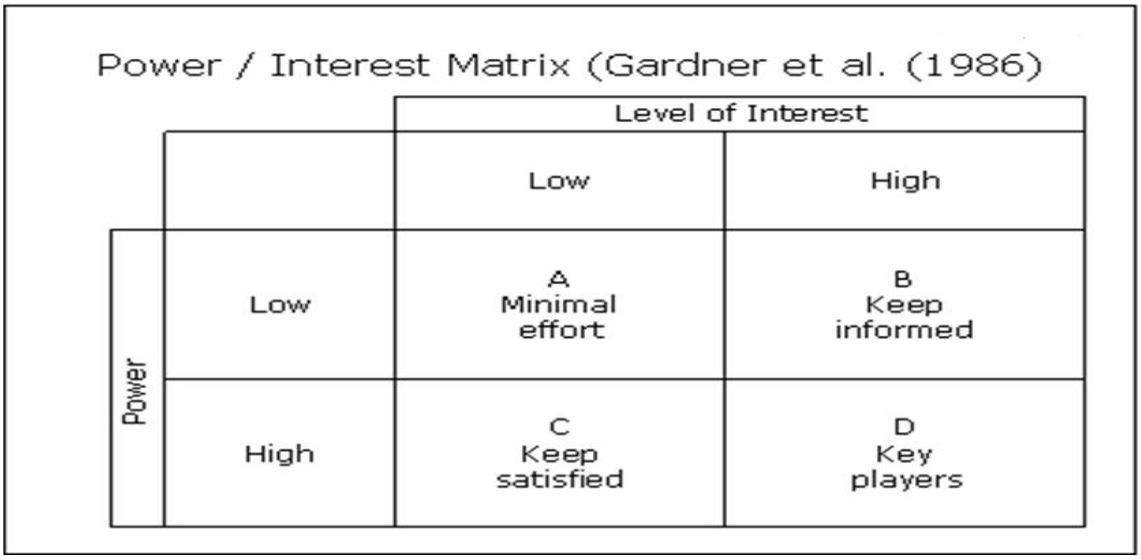
Being a Project Manager, how would you identify the stake holders by power/interest Matrix if the case study is the Bus Rapid Transit (BRT) Peshawar? Also explain the assigned stakeholders in power/interest matrix?

Ans:

The Power / Interest Matrix

Classifies stakeholders in relation to their power and the extent to which they are likely to show interest in the actions of the organization.

Can be used to indicate the nature of the relationship which should be adopted with each group.



Stakeholders in group A: Need only minimum effort an monitoring.

Stakeholders in group B: Should be kept informed as they may be able to influence more powerful stakeholders.

Stakeholders 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.

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

In Case of Bus Rapid Transit (BRT) Peshawar

1) **Low power and low interest:** worker they have low power and low interest.

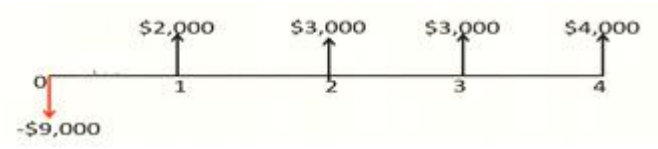
2) **Low power and high interest:** people they have low power and high interest.

3) **High power and low interest:** Politician they have high power and low interest.

4) **High power and high interest: PDA** they have high power and high interest.

PART B

A Company is planning to invest 9000$ in a project today. The project is expected to have life of four years. The expected cash flow for next four years is shown and the discount rate is 6%. Calculate Net present value (NPV) and comment on the result?



Sol:-

formula :-

$$\text{present value} = \frac{Fv}{(1+R)^n}$$

Fv = Future value

R = Discount Rate

n = period

$PV_0 = -9000$

$PV_1 = \frac{2000}{(1+0.06)^1}$ ∴ n = 1, R = 6%

$PV_1 = 1886.79$

$PV_2 = \frac{3000}{(1+0.06)^2}$ ∴ n = 2

$= 2669.98$

$PV_3 = \frac{3000}{(1+0.06)^3}$ ∴ n = 3

$= 2518.85$

$PV_4 = \frac{4000}{(1+0.06)^4}$ ∴ n = 4

$= 3168.37$

NPV = $PV_0 + PV_1 + PV_2 + PV_3$

$= -9000 + 1886.79 + 2669.98 + 2518.85 + 3168.37.$

$= 843.99.$

Comments:-

the NPV of $ 843.99 Suggest that the Combine pv of all Cash inflows exceeds the PV of Cash out flows by 843.

Q.No. (03)

If you have a project of 10 packages for each package planned value, Actual cost and percentage of completion is given. Calculate the earned value, cost variance, schedule variance, cost performance index and schedule performance index? Also calculate Estimate at completion (EAC) if previous variances are expected to be continued during the rest of the project. (Comment if the project is ahead/behind schedule or over/under budget).

ANS

	PV	AC	%	EV	$\left(\frac{EV}{PV}\right)$ SPI	(EV−PV) SV	$\left(\frac{EV}{AC}\right)$ CPI	(EV−AC) CV
1)	100,000	120,000	100	120,000	1.2	20,000	1	0
2)	100,000	110,000	100	110,000	1.1	10,000	1	0
3)	100,000	80,000	90	99,000	0.98	1000	1.23	19000
4)	100,000	125,000	80	64,000	0.64	36000	0.512	-61,000
5)	100,000	85,000	50	62,500	0.625	37500	0735	-22500
6)	100,000	0.00	0%	0.00	0.00	0.00	0.00	0.00
7)	100,000	0.00	0%	0.00	0.00	0.00	0.00	0.00
8)	100,000	0.00	0%	0.00	0.00	0.00	0.00	0.00
9)	100,000	0.00	0%	0.00	0.00	0.00	0.00	0.00
10)	100,000	0.00	0%	0.00	0.00	0.00	0.00	0.00
	Commulitive				4.535		4.477	

Comments:- Spi ↓ Cpi > 1 over project has over the Schedule ↓ under the budget

Q.No. (04)

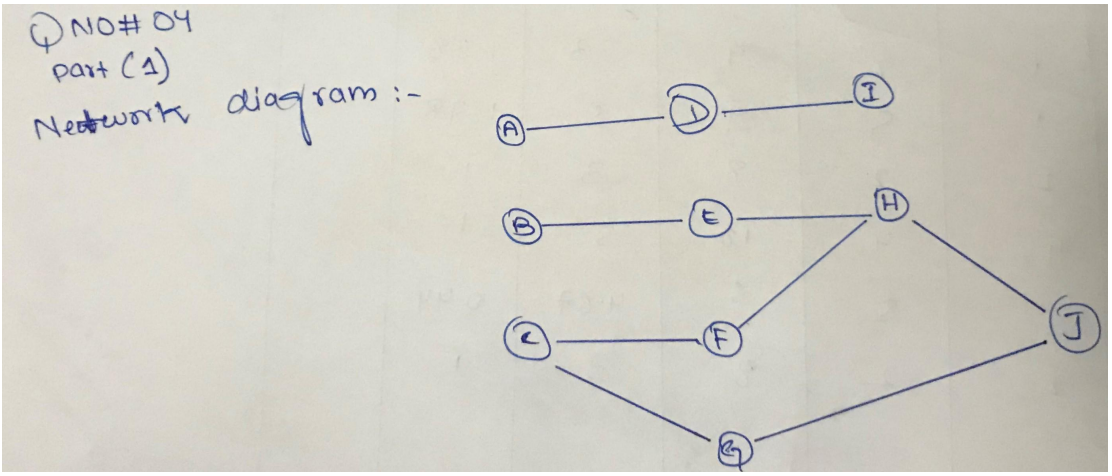
Construct the network diagram of the given project?

Calculate the expected time, variance of each activity and project completion time?

What is the probability of completing the project on or before 14 weeks?

ANS

Q NO# 04
part (1)
Network diagram :-



Activity	Procedure	(a) optimistic	most likely	(b) pessmitic	$t=\frac{(a+(4\times m)+b}{6}$	$v=\left(\frac{b-a}{6}\right)^2$
A	-	5	6	7	6	0.11
B	-	1	3	5	3	0.44
C	-	1	4	7	4	1
D	A	1	2	3	2	0.111
E	B	1	2	9	3	1.78
F	C	1	5	9	5	1.78
G	C	2	2	8	3	1
H	E F	4	4	10	5	1
I	D	2	5	6	4.67	0.44
J	H G	2	2	8	3	1

Project Complition time.

C_p is C-F-H-J = 4+5+4+2 = 15

Project complition time is 15 week.

Q NO #04
Part(iii)

Activity	Expected time	variouns
C	4	1
F	5	1.78
H	4	1
J	2	1
	15	4.78

Formula for Z Score $= \frac{P(x-t)}{\sqrt{\sigma}}$

To find $(x-<14)$ =

$$Z = \frac{(14-15)}{\sqrt{4.78}}$$

$= 0.457$ Check in table.

From table we get (0.6736)

This means we have 67.36% probability of completing the project on or before 14 weeks.