

lib (90)
ECS-8-CBC'C'
17/5/23

Time: 3-hour

Marks: 80

- N.B. : (1) Question No 1 is Compulsory.
(2) Attempt any three questions out of the remaining five.
(3) All questions carry equal marks.
(4) Assume suitable data, if required and state it clearly.
(5) Notations carry usual meaning.

Q1. Answer the following (Any FOUR.)

[20M]

- a) What are the contents of project charter? who prepares and authorizes the project charter? ch. 5, Slide No. 89 to 91
b) Compare the top-down budgeting and bottom-up budgeting. ch. 3, Slide No. 24
c) What is Goldratt's critical chain method? — ch. 4, Slide No. 22 & 23
d) Explain the significance of IRR method in project selection. ch. 2, slide No. 49 & 50
e) Briefly describe the purchasing cycle. (same as procurement) ch. 5, Slide No. 52
f) Explain the risk breakdown structure. ch. 4, slide no. 33

- Q2. (a) A consulting project has an actual cost of Rs. 35000, Scheduled cost Rs. 27000, and [5M] completed work is Rs. 31000. Find the Scheduled and Cost Variance. Also find SPI and CPI. Refer Attachment
(b) What is a contract? Explain different types of contracts in brief. ch. 5 Slide No. [5M] 57 to 60
(c) Consider a project having following cash flow stream. The cost of capital (r) for the firm is 10%. Calculate NPV of project and decide whether to accept or reject the project. [10M]

Year	0	1	2	3	4	5
CASH Flow in Rs.	10,00,000	2,00,000	2,00,000	3,00,000	3,00,000	3,50,000

Refer Attachment

- Q3. (a) What is project life cycle? how does cost of change, risk and influence of stakeholders are affected with Project time during the life cycle of project? → ch. 1 [10M] Slide No. 16 to 20

- Q3. (b) Explain probability and impact matrix. What are the risk response strategies for negative risks (threats) and positive risks (opportunities). [10M]

ch. 4
Slide No. 35
ch. 4
Slide No. 47 & 48

$$SD = \sqrt{Var}$$

$$\sigma = \sqrt{\sigma^2}$$

$$\mu = \frac{t_o + 4t_m + t_p}{6}$$

$$Var = \sigma^2 = \left[\frac{t_p - t_o}{6} \right]^2$$

Six
Six

Paper / Subject Code: 89380 / Institute Optional Course-2: Project Management

t_o = most optimistic
 t_m = most probabilistic
 t_p = most pessimistic

μ = mean
 σ^2 = variance
 σ = standard deviation

Q4.

(a) A small project is composed of 8 activities, whose time estimates are listed below.

Activity	Predecessor	t_o	t_m	t_p	μ	σ^2	σ
A	-	3	6	9	6	1	1
B	-	5	7	8	6.83	0.25	0.5
C	A	6	9	12	9	1	1
D	A	6	12	15	11.5	5.0625	2.25
E	B	9	12	18	12.5	5.0625	2.25
F	B	12	18	24	18	4	2
G	C, D, E	6	9	12	9	1	1
H	C	3	6	9	6	1	1

i) Draw the project network diagram. Find the critical path and expected project duration.

ii) If the due date is 30 days. What is the probability that the project will be completed within the due date?

iii) Find the probability of completing project between 26 to 31 days.

[10M]

ch. 2 Slide No. 07

Q4. (b) What are the non-numeric models of project selection? Explain in brief.

[5M]

Q4. (c) Explain importance of ethics in projects.

→ ch. 6 Slide No. 11 & 12

[5M]

Q5. (a) How communication is planned and managed in project management?

[10M]

ch. 4 Slide No. 27 to 29

Q5. (b) What is life cycle of a project audit? what are responsibilities of project auditor?

What is essential for successful project audit?

→ ch. 5 Slide No. 50

[10M]

ch. 5 Slide No. 49

Q6. (a) What are four stages of team development and growth? What are the barriers to team effectiveness?

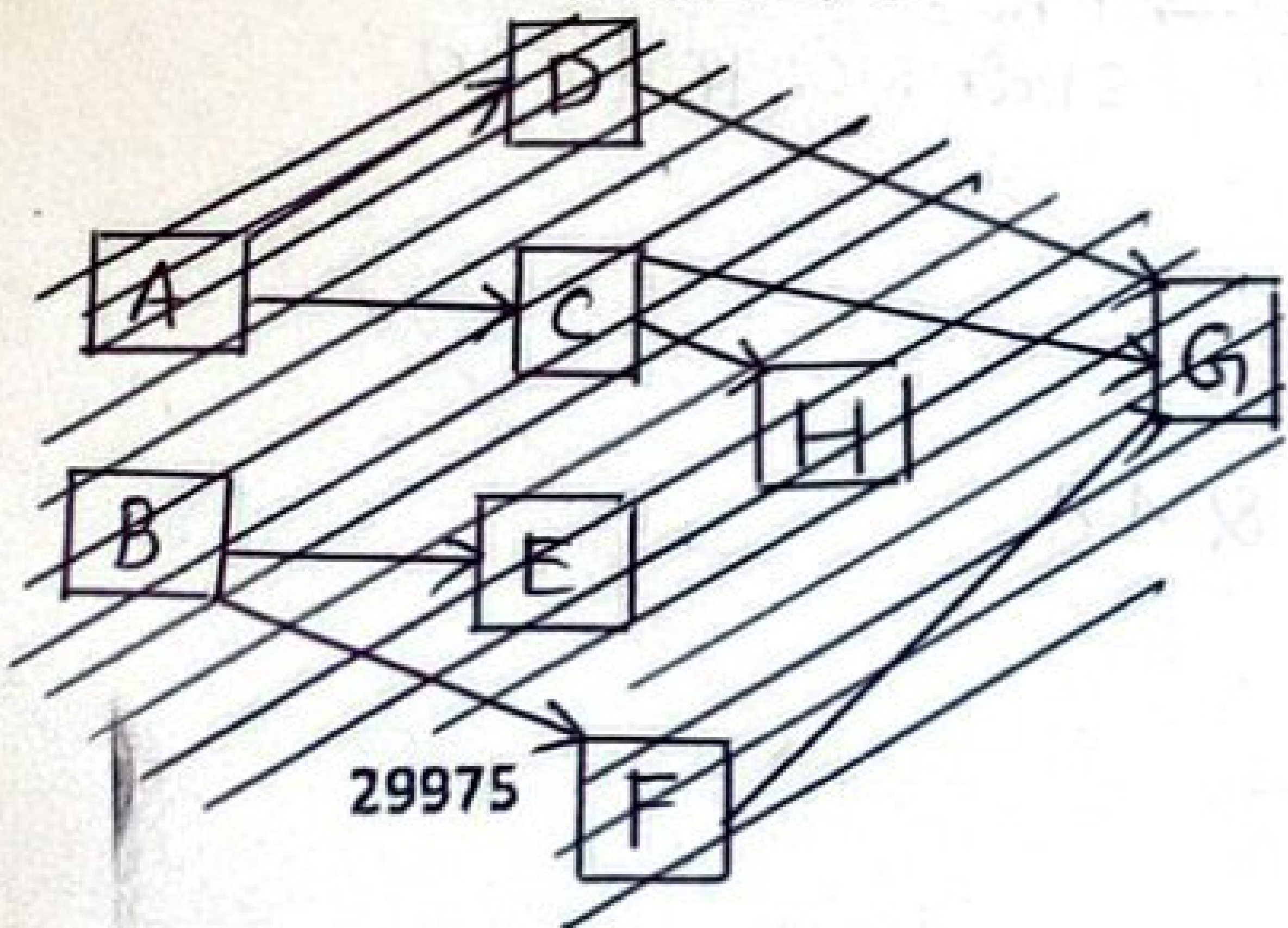
→ ch. 2 Slides No. 66 to 71

→ ch. 2 [10M] Slide No. 73

Q6. (b) List and briefly describe the ways project may be terminated. What are some non-technical reasons for project termination?

→ ch. 6 Slides No. 3 & 4

→ [10M] ch. 6 Slide No. 5



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Q.2 (a) Data Given

Actual cost (AC) = ₹35,000/-

Scheduled cost (SC) = ₹27,000/-

Completed work (EV) = ₹31,000/-
also called earned value

$$\text{Schedule variance (SV)} = EV - PV = 31,000 - 27,000$$
$$\boxed{SV = ₹4000/-}$$

→ also SC

positive SV means project is ahead of schedule

$$\text{cost variance (CV)} = EV - AC = 31,000 - 35,000$$

$$\boxed{CV = -₹4000/-}$$

Negative CV means project is over budget.

$$SPI = EV/PV = 31,000/27,000$$

$$\boxed{SPI = 1.148}$$

$$CPI = EV/AC = 31,000/35,000$$

$$\boxed{CPI = 0.8857}$$

Q.2 (c) Data Given

$$A_0 = 10,00,000$$

$$K \text{ or } r = 0.1 (10\%)$$

$$F_1 = 2,00,000$$

$$F_2 = 2,00,000$$

$$F_3 = 3,00,000$$

$$F_4 = 3,00,000$$

$$F_5 = 3,50,000$$

$$NPV = -A_0 + \sum_{t=1}^n \frac{F_t}{(1+r)^t}$$

→ Negative sign because of initial investment

$$NPV = -A_0 + \frac{F_1}{(1+0.1)^1} + \frac{F_2}{(1+0.1)^2} + \frac{F_3}{(1+0.1)^3} + \frac{F_4}{(1+0.1)^4} + \frac{F_5}{(1+0.1)^5}$$

$$NPV = -10,00,000 + \frac{2,00,000}{(1.1)^1} + \frac{2,00,000}{(1.1)^2} + \frac{3,00,000}{(1.1)^3} + \frac{3,00,000}{(1.1)^4} + \frac{3,50,000}{(1.1)^5}$$

$$\text{Hence } NPV = -₹5271.63$$

AS NPV is negative the project should be rejected