

# CBCS SCHEME

18CV51

USN 2 V D 1 8 C V 0 2 9

## Fifth Semester B.E. Degree Examination, Feb./Mar. 2022 Construction Management and Entrepreneurship

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

### Module-1

- 1 a. Explain the functional areas of Management. (08 Marks)  
b. List and explain the Nature or characteristics of Planning. (08 Marks)  
c. Discuss the dependencies in a Gantt chart, with neat sketches. (04 Marks)

OR

- 2 a. With illustration, explain AOA and AON network diagrams. (08 Marks)  
b. The activity data of a project is given in the table below :

Activity	Predecessor	Duration
A	-	5
B	A	4
C	-	6
D	C	3
E	-	5
F	E	3
G	D, F	6
H	D, F	8
I	B, G	4
J	B, G	7
K	H, I	5
L	J, K	2

Draw the network diagram, Identify the critical path and Project duration using CPM. (08 Marks)

- c. Discuss the types of Management Styles. (04 Marks)

### Module-2

- 3 a. Explain i) Minimum Wages Act 1948 ii) The Labour Welfare Fund Act 1965 (08 Marks)  
b. Explain the importance of Resource Management in the construction of a Project. (08 Marks)  
c. Discuss the types of Maintenance. (04 Marks)

OR

- 4 a. Define Labour Production Rate or Productivity. Discuss the factors affecting Productivity. (10 Marks)  
b. The initial cost of a piece of construction equipment is Rs 35,00,000. It has a useful life of 10 years. The estimated salvage value of the equipment at the end of useful life is Rs 5,00,000. Calculate the Annual depreciation and Book value of the construction equipment using Sinking fund method. The interest rates is 8% per year. (10 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appeal to evaluator and/or equations written eg, 42+8 = 50, will be treated as malpractice.



**Module-3**

- 5 a. Explain the process of Project Quality Management. (10 Marks)  
 b. Explain the Safety measures adopted during drilling and blasting. (10 Marks)

**OR**

- 6 a. Discuss in detail about the cost of Quality in construction. (10 Marks)  
 b. Explain the types of Conflict of Interest. (06 Marks)  
 c. Discuss the following : (04 Marks)  
 i) Gifts and Bribes                      ii) Whistle Blowing.

**Module-4**

- 7 a. Define Engineering Economics. Explain the principles of Engineering Economy. (08 Marks)  
 b. With illustration, explain Cash Flow diagram. (06 Marks)  
 c. Differentiate between Micro and Macro Economics. (06 Marks)

**OR**

- 8 a. Explain Break Even Analysis. Mention the assumptions of Break Even Analysis. (08 Marks)  
 b. A firm has identifies two mutually exclusive investment proposals for new project whose details are given below. The life of all the two alternatives is estimated to be five years with negligible salvage value. The minimum attractive rate of return for the firm is 12%. Find the best alternative based on the rate of Return method of Comparison. (12 Marks)

	Alternative 1	Alternative 2
Investment	1,50,000/-	3,10,000/-
Annual Net Income	50,000/-	90,000/-

**Module-5**

- 9 a. Explain the stages in Entrepreneurial Process. (10 Marks)  
 b. Discuss in detail about the Project report for starting a new Venture. (10 Marks)

**OR**

- 10 a. Explain the role and significance of Venture Capital. (10 Marks)  
 b. Mention the objectives and functions of following agencies : (10 Marks)  
 i) KIADB                                      ii) TECSOK.

\* \* \* \* \*



- Q 1 a. The functional areas of Management are :
- i. PLANNING : It involves formulation of a number of work plans for achieving specified objectives and finally selecting a plan which is best suited from the point of available resources. - 1M
  - ii. SCHEDULING : It is fitting of final work plan to a timed scale. It shows the duration and order of various construction activities. - 1M
  - iii. ORGANIZING : It is concerned with division of total construction work into manageable department or sections and systematically arranging various operations by delegating specific task to individuals. - 1M
  - iv. STAFFING : Recruiting the right people, arranging staff training courses and carrying out proper staff assessment are the parts of staffing function. - 1M
  - v. DIRECTING : The directing function is concerned with training sub-ordinates to carry out assigned task, supervising their work and guiding their efforts. - 1M
  - vi. CONTROLLING : This function of management relates to monitoring the progress achieved in comparison with the planned programme and identify the areas of deficiency so that remedial measures may be taken to remove this deficiency. - 1M
  - vii. COORDINATING AND COMMUNICATING : This function of management relates to harmonizing the action and approach of various groups of employees to achieve a common objective. - 1M
  - viii. DECISION - MAKING : It is a process or means of selecting one alternative out of two or more available alternatives. - 1M

Q 1 b. The characteristics of planning are as follows :

- i. Managerial function
- ii. Goal oriented
- iii. Pervasive



- iv. Continuous Process
- v. Intellectual process
- vi. Futuristic
- vii. Decision making

-1M

i. MANAGERIAL FUNCTION: Planning is a first and foremost managerial function which provides the base for other functions of the management i.e organising, staffing, directing and controlling as they are performed within the periphery of the plans made.

-1M

ii. GOAL ORIENTED: It focuses on defining the goals of the organisation, identifying alternative courses of action and deciding the appropriate action plan, which is to be taken for reaching the goals.

-1M

iii. PERVASIVE: It is pervasive in the sense that it is present in all the segments and is required at all the levels of the organisation.

-1M

iv. CONTINUOUS PROCESS: Planning is an ongoing process as the plans are framed, executed and followed by another plan.

-1M

v. INTELLECTUAL PROCESS: It is a mental exercise as it involves the application of mind, to think, forecast, imagine intelligently and innovate.

-1M

vi. FUTURISTIC: Planning encompasses looking into the future, to analyse and predict it so that the organisation can face future challenges effectively.

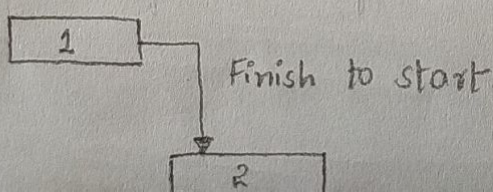
-1M

vii. DECISION MAKING: Decisions are made regarding the choice of alternative courses of action that can be undertaken to reach the goal.

-1M

1. c] There are four dependencies in a Gantt chart. They are as follows:

i. FINISH TO START: In a finish to start dependency, one or several tasks [predecessors] must be completed before a task can be finished.

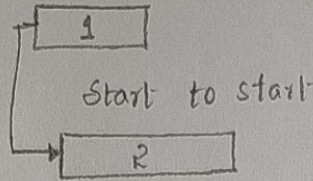


-1M



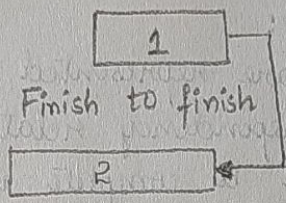
ii. START TO START : In a start to start dependency, task 1 must start before task 2 can start. Namely, task 2 cannot start until task 1 has started.

-1M



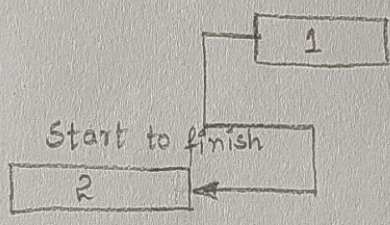
iii. FINISH TO FINISH : In a finish to finish dependency, task 2 cannot finish until task 1 is finished. Task 1 and task 2 don't have to end at the same time, and task 2 can end any time after task 1 is finished

-1M



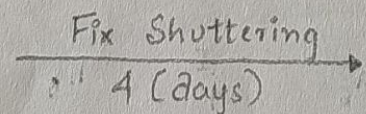
iv. START TO FINISH : In a start to finish dependency, task 2 can't finish until task 1 has started. Task 2 can finish any time after task 1 has started.

-1M



2 a) ACTIVITY - ON - ARROW [A-O-A] SYSTEM :

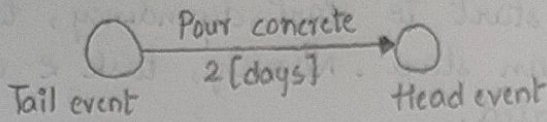
In this system, an activity is graphically represented by an arrow drawn from left to right. The description of the activity is written above the arrow and the time taken to complete the activity is written below it. The length of the arrow has no relationship to the duration of the activity that it represents.



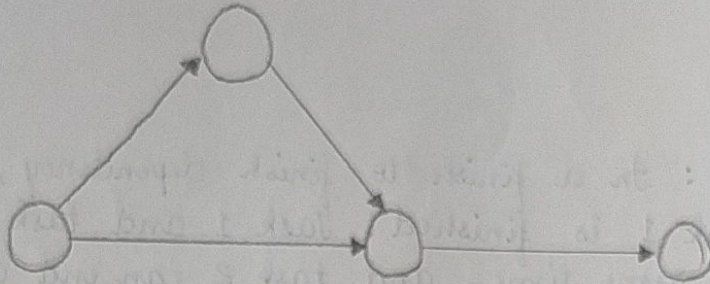
Representation of activity

An event is graphically represented by a number enclosed in a circle. The beginning of an activity is marked by a 'tail event' or preceding event and the end by a 'head event' or succeeding event.





Representation of Event



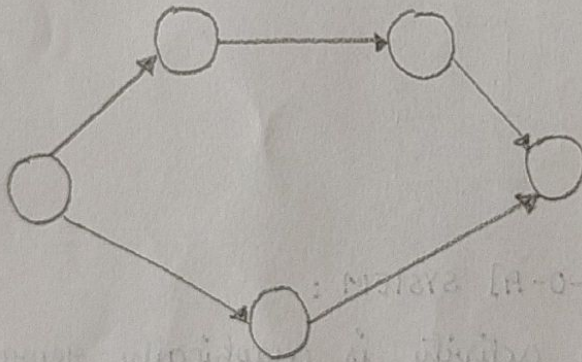
Network on A-O-A system

-4M

ACTIVITY - ON - NODE [A-O-N] SYSTEM :

In this system, activities are represented on the nodes and arrows are used to show the dependency relationships between the activity nodes. The time required to complete an activity is also indicated in the node.

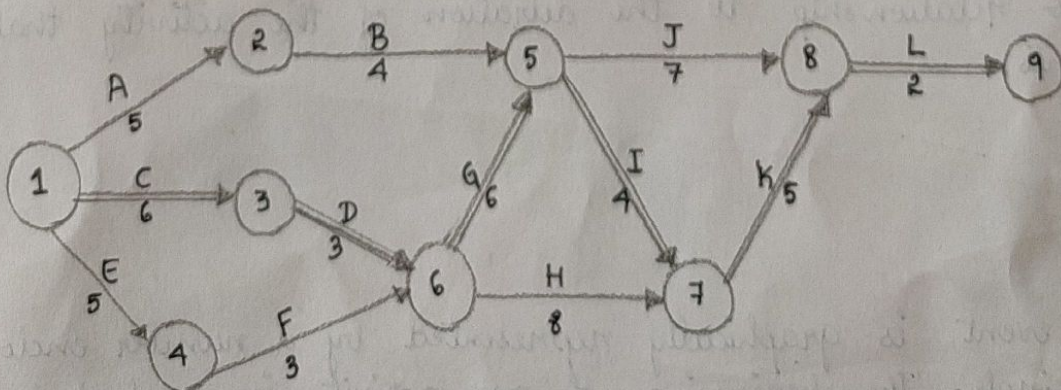
The A-O-N system is widely used in network techniques and is very popular in construction projects.



Network on A-O-N System

-4M

Q2 b]



Network diagram

-4M



Critical path = 1-3-6-5-7-8-9

Total duration = 26 days

-2M

-2M

Q. 2 c] The types of management styles are as follows:

- i. AUTOCRATIC: In this style, the manager makes decisions unilaterally and without regard for even the most talented and experienced subordinates. As a result, it reflects the opinions and personality of the manager. -0.5M
- ii. CONSULTATIVE: This style is advantageous when the management seeks the loyalty of the subordinates for better efficiency of work and on time completion of project. -0.5M
- iii. PERSUASIVE: It involves the manager sharing some characteristics with that of an autocratic manager. They maintain control over the entire decision-making process. -0.5M
- iv. DEMOCRATIC: The manager allows the employees to take part in decision-making. The communication is two-way i.e. between the employees and the leaders and vice versa. -0.5M
- v. CHAOTIC: The management gives the employees total control over decision-making process. -0.5M
- vi. LAISSEZ-FAIRE: The management takes a back seat role in the company providing guidance when needed. Employees are allowed to put their own ideas. -0.5M
- vii. MANAGEMENT BY WALKING AROUND: It is a technique used by managers who are proactive listeners. -0.5M
- viii. BUREAUCRATIC: Leaders who adhere to this style focus on assigning specific duties to employees within a well-defined hierarchy. -0.5M

Q. 3 a]

i. MINIMUM WAGES ACT 1948 :

- It provides for fixation / periodic revision of minimum wages in employments where labour is vulnerable to exploitation. It serves a useful purpose in preventing worker's exploitation in terms of payment of unduly low wage and helps in reducing inequalities in the standard of living of different social groups of workers



by statutorily prescribing minimum wage rates. The main provisions of the act include:

- setting up of advisory committee to collect detailed information such as cost of living index.
- setting up the standard hours entitled for standard pay
- payment made to employees with due notification.
- maintaining of register indicating particulars of employees, wages paid to them and receipts given by them.

-4M

ii. THE LABOUR WELFARE FUND ACT 1965 :

It was enacted to provide for the constitution of a fund to finance activities for promoting welfare of labour and for conducting such activities. The fund comprises of all fines realised from employees, unpaid wages of the workers including gratuity, bonus, etc, grants and loans towards the fund and voluntary donations. The fund is used to carry on various activities conducive to the welfare of labour.

-4M

Q.3 b] Importance of resource management in the construction of a project is as follows:

- Resource plan is prepared according to the project's delivery timelines and helps keep the project on track.
- Experienced project managers and effective resource management lays the foundation of a successful project.
- Resource management helps to set realistic expectations for the project deliverables among clients and other stakeholders.
- Helps to accurately estimate project costs and project profit margins
- Offers improved insight into actual project costs and overall profitability of the project.
- Helps to prevent over-working or under-utilizing their human resources. Leads to increased employee satisfaction.
- Optimal utilization of resources to prevent over-burdening.
- Avoid unforeseen challenges and conflicts
- Improve project delivery

-8M



Q. 3c] The types of maintenance are as follows:

i. BREAKDOWN MAINTENANCE :

- It can occur due to following reasons -
  - due to unpredictable failure of components which cannot be prevented
  - due to gradual wear and tear of the parts
- In this, defects are rectified and repair shall have to be done on failure, which may disrupt the whole production.
- It is much expensive due to increase of depreciation cost, payment to idle operators, overtime to the maintenance staff for doing the emergency repairs, and idling of matching equipment.

-2M

ii. PREVENTIVE MAINTENANCE :

- Also termed as 'planned maintenance' or 'scheduled maintenance' or 'systematic plant maintenance'.
- Reduces maintenance cost, keeps the operational condition of equipment and increases the reliability.
- It aims at locating the sources of trouble and to remove them before breakdown occurs.
- Objectives of this maintenance involves -
  - minimal wear and tear, thus preserving value of equipment
  - ensure safety of workers
  - keep the plant at maximum production efficiency.

-2M

Q. 4a] Labour productivity is a measure of rate at which work is performed. It can be defined as a ratio of production output to labour input.

-2M

The factors affecting labour output or productivity are as follows:

- OVERTIME : Scheduling of extended work days or weeks exceeding a standard lowers work output and efficiency through physical fatigue and poor mental attitude.
- MORALE AND ATTITUDE : Spirit of workers can be lowered due to issues like increased conflicts, disputes, hazards, overtime, poor site conditions. etc.
- WORK COMPLEXITY : A simple, familiar work, is easier to execute than an unfamiliar, complex one.



- iv. REPETITION OF WORK: The skill acquired in the repetitive works, when utilized over a period of time to execute similar works, improves productivity rate.
- v. QUALITY CONTROL: Stringent quality control in sensitive projects, which involve elaborate documentation and time consumption increase the non-productive time of workers.
- vi. EQUIPMENT - INTENSIVE TASKS: These tasks are less susceptible to productivity changes than the labour-intensive ones.
- vii. SUPERVISION: An efficient supervisor can get a higher productivity from labourers.
- viii. DILUTION OF SUPERVISION: This occurs when supervision is diverted from productive, planned and scheduled work to analyse and plan contract changes, manage added crews or other changes not in original work scope.
- ix. LABOUR AVAILABILITY: The labour productivity also depends upon the employment opportunities available in the market. In scarce job situation, overall productivity improves.
- x. MOBILIZE / DEMOBILIZE: This relates to moving resources on and off project sites where productivity drops as crew is involved in movement.
- xi. ERRORS & OMISSIONS: Increases in errors and omissions impact on labour productivity.
- xii. START / STOP: This results from a work stoppage or suspension which causes a break in the schedule, triggering a start/stop of work activity.
- xiii. SITE ACCESS: This is a result of interferences to the planned access to work areas like blocked stairways, roads, walkways, etc.
- xiv. HAZARDOUS WORK AREA: Restrictions in hazardous work area may limit time and exposure of workers to area.
- xv. CLIMATIC & WEATHER CONDITIONS: Performing work in a change of season, temperature zone, climate change can impact workers beyond normal conditions.
- xvi. ROLE OF MANAGEMENT: The project management has a key role to play in planning and controlling productivity.

- ANY  
8 factor  
1M each



Q. 46]

Given:  $P = ₹ 35,00,000$

$F = ₹ 50,000$

$n = 10 \text{ years}$

The interest rate per year =  $i = 8\%$

Depreciation amount for 1<sup>st</sup> year:

$$D_1 = (35,00,000 - 50,000) \times \frac{0.08}{(1+0.08)^{10} - 1} (1+0.08)^{1-1}$$

= ₹ 207088.47

Book value at the end of 1<sup>st</sup> year

$B_1 = 35,00,000 - 207088.47 = ₹ 3292911.53$

Depreciation amount for 2<sup>nd</sup> year:

$$D_2 = (35,00,000 - 50,000) \times \frac{0.08}{(1+0.08)^{10} - 1} (1+0.08)^{2-1}$$

= ₹ 223655.55

Book value at the end of 2<sup>nd</sup> year

$B_2 = 3292911.53 - 223655.55 = ₹ 3069255.98$

Similarly for every year the depreciation and book value can be calculated using sinking fund method as follows:

YEAR	SINKING FUND METHOD	
	DEPRECIATION (₹) $D_t$	BOOK VALUE (₹) $B_t$
0		3500000
1	207088.47	3293911.53
2	223655.55	3069255.98
3	241547.99	2827707.99
4	260871.83	2566836.16
5	281741.58	2285094.58
6	304280.90	1980813.68
7	328623.38	1652190.30
8	354913.25	1297277.06
9	384913.25	913970.75
10	413970.81	50,0000

-0.5M

-0.5M

-0.5M

-0.5M

- Each value of  $D_t$  &  $B_t$  carries 0.5M



Q.5 a] The process of project quality management includes the following:

- i. Quality Planning/  
Quality Management      ii. Quality Assurance      iii. Quality Control.

-1M

i. QUALITY MANAGEMENT: It is the assembly and management of all activities aimed at the production of quality by organizations of various kinds. A statement of objectives and policy to produce quality should be made for the organization or department concerned. Total quality management, a wider concept of quality management includes additional aspects such as leadership style, ethics, etc.

-3M

ii. QUALITY ASSURANCE: It is the assembly of all planned and systematic actions necessary to provide adequate confidence that a product, process, or service will satisfy given quality requirements. It is defined as a set of activities whose purpose is to demonstrate that an entity/product meets all quality requirements.

-3M

iii. QUALITY CONTROL: It involves operational techniques meant to ensure quality standards. This includes identifying, analyzing and correcting problems. It monitors specific project outputs and determines compliance with applicable standards. Quality control also identifies project risk factors, their mitigation, and looks for ways to prevent and eliminate unsatisfactory performance. It can also ensure that the project is on budget and on schedule. Monitoring the project outputs can be done through peer reviews and testing.

-3M

Q.5 b] The safety measures to be adopted during drilling and blasting are as follows:

- Detonators and other explosives for blasting shall be transported to the site of work in the original containers or in securely locked separate non-metallic container and shall not be carried loose or mixed with other materials.
- Care should be taken in loading and unloading of explosives.
- Explosives shall be stored only in clean, dry, well ventilated place.
- Any package containing explosives shall not be dragged, dropped or handled roughly.
- Smoking shall not be permitted nor matches, open lights, fire



flame, or any other device capable of producing sparks or flame shall be carried while handling or using explosives.

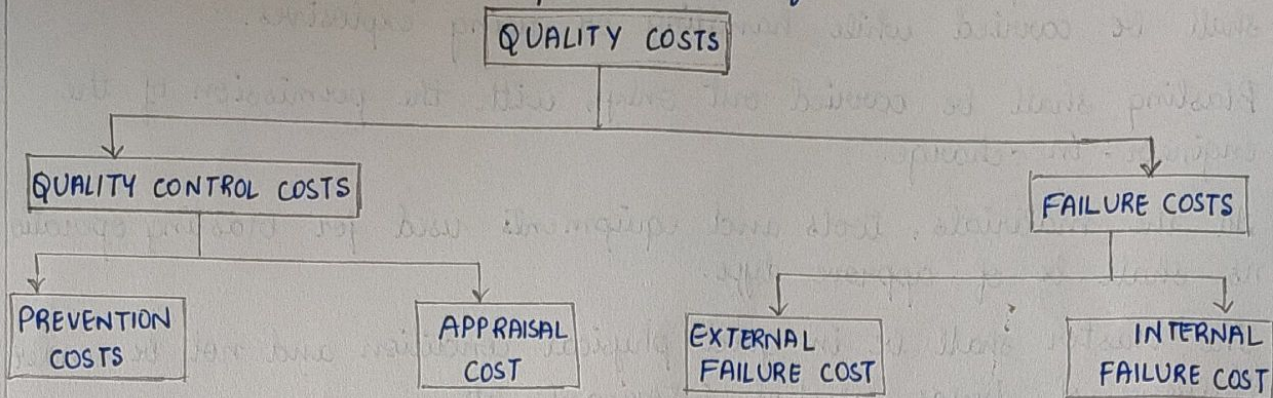
- Blasting shall be carried out only, with the permission of the engineer-in-charge.
- All the materials, tools and equipments used for blasting operations shall be of approved type.
- The blaster shall be in good physical condition and not be under influence of drugs, alcohol intoxicants etc.
- Consideration must be given to the nature of stratum and the overburden with a view to avoid the land-slides after blasting.
- Position of all holes to be drilled shall be marked out with white paint.
- The borehole shall be carefully checked for length, presence of water, dust, before loading. It shall be cleared of all debris before explosives are inserted.
- Surplus explosives shall not be stacked near working areas during loading.
- A bore hole shall not be loaded with explosives after springing.
- Rock drillers shall be equipped with approved respirators for use in silicious dusty atmosphere arising out of drilling operations.
- Before blasting, sufficient warning shall be given to enable the people working in the blasting area to get off danger zone. The danger zone shall be suitably cordoned off and flag men posted at important points.
- No loose materials, such as tools, drilling implements, etc shall be left on the rock surfaces to be blasted.
- Blasting in the open shall be carried out during fixed hours every day or on fixed days in the week.
- All approaches to the project site, where regular blasting operations are undertaken, shall be sign-posted for warning the public and indicating the days and timings when blasting is to be carried out.
- Loud wailing note shall be sounded on sirens to warn the public before commencement of firing. The end of firing operations must be followed by sounding an all clear signal on the sirens.

ANY  
10 points  
1 Mark

-10 M



Q.6a] The cost breakdown is represented as follows:



It is clear that,

Quality costs = Quality control costs + Failure costs

Quality control costs = Prevention costs + Appraisal costs

Failure costs = Internal failure costs + External failure costs.

PREVENTION COSTS: It refers to the cost of quality control activities undertaken before and during production. It is the cost of efforts undertaken to prevent failures. Eg: costs of training, design reviews and any activity aimed at preventing errors.

APPRAISAL COST: It is given by the costs incurred for quality control assurance after production. Eg: costs of inspection, testing and examination to assess that the specified quality is being maintained.

INTERNAL FAILURE COST: It is the cost resulting from a product or service failing to meet the quality requirements. Eg: warranties and return, liability costs, product recall cost, direct cost or allowances.

EXTERNAL ASSURANCE COST: It includes,

- costs relating to the demonstration and proof evidence to customers.
- cost of testing by recognized, independent testing bodies for quality assurance provisions, demonstration and assessments
- cost of independent assessment / third-party agency performing a detailed and in-depth study of company's QA activities.



Q.6b] The types of conflict of interest are as follows:

i. ACTUAL CONFLICT OF INTEREST:

It is based on weaker judgement and service. It refers to the loss of objectivity in decision making and inability to faithfully discharge professional duties to employer. -1M

ii. POTENTIAL CONFLICT OF INTEREST:

There are situations where the interest of an employee extends beyond the current employer and into the interest on one's spouse -1M  
- relative or friend.

iii. APPARENT CONFLICT OF INTEREST:

It may occur when an engineer is paid based on a percentage of the cost of the design and there is no incentive for him to cut-costs. In this situation, it appears that the engineer is making the design more expensive in order to make a large commission for himself. -1M

iv. INTEREST IN OTHER COMPANIES:

This kind of conflict of interest consists of having an interest in the business of a competitor or a sub-contractor. -1M

v. MOONLIGHTING:

It deals with a person who is working in two companies. This will break the rights, to pursue a person's self interest. It will produce the conflict of interests only when a person is working for competition. -1M

vi. INSIDER INFORMATION:

It is a kind of sensitive conflict of interest which consists of using "inside" information to make an advantage or to start a new business opportunity for oneself, one's family or one's friends. The information may be of a person's own company or another company with which he does business. -1M

Q.6c]

i. GIFTS AND BRIBES:

Gift is something of value given without the expectation of return. A bribe is the same thing given in the hope of influence or benefit. Because, it is impossible to determine



the expectations of the giver. All federal, state and local officials, both elected and appointed, are governed by rules restricting gifts. Bribes is something offered or given to someone in a position of trust in order to induce him/her to act dishonestly. A gift becomes a bribe when:

- The line which separates appropriate and inappropriate gifts
- Look for answers in written company policy and ethical codes.

-2M

## ii. WHISTLE BLOWING:

The act by an employee which informs the public or higher management of unethical or illegal behaviour by an employer or supervisor. A whistleblower is a person working within an organization who reports that organization's misconduct. Types of whistleblowing include -

- Internal - whistleblower reports misconduct to another person within the organization.
- External - whistleblower reports misconduct to a person outside the organization such as law enforcement or media.
- Anonymous - whistleblower does not identify himself but reports misconduct to a person outside the organization.

-2M

7 a] Engineering economics is a subset of economics concerned with the use and application of economic principles in the analysis of engineering decisions. It involves formulating, estimating and evaluating the economic outcomes when alternatives to accomplish a defined purpose are available.

-1M

Principles of Engineering Economics are as follows:

### i. DEVELOP THE ALTERNATIVES:

The decision is among the alternatives. The alternatives are to be identified and then defined for subsequent analysis. A decision involves making a choice among two or more alternatives.

-1M

### ii. FOCUS ON THE DIFFERENCES:

Only the difference in expected future outcomes among the alternatives is relevant to their comparison and should be considered when making the decision.

-1M



iii. USE A CONSISTENT VIEWPOINT:

The prospective outcomes of the alternatives, economic and other, should be consistently developed from a defined viewpoint. It is important that the viewpoint for a particular decision be first defined and then used consistently in the description, analysis and comparison. -1M

iv. USE A COMMON UNIT OF MEASURE:

Using a common unit of measurement to enumerate as many of the prospective outcomes as possible will make easier the analysis and comparison of alternatives. -1M

v. CONSIDER ALL RELEVANT CRITERIA:

Selection of a preferred alternative. The decision process should consider all the outcomes enumerated in the monetary unit and those expressed in some other unit of measurement made explicit in a descriptive manner. -1M

vi. MAKE UNCERTAINTY EXPLICIT:

Uncertainty is inherent in projecting for estimating the future outcomes of the alternative recognized their analysis and comparison. -1M

vii. REVISIT YOUR DECISION:

Improved decision-making results from an adaptive process. The projected outcomes of the selected alternative should be subsequently compared with the actual results achieved. -1M

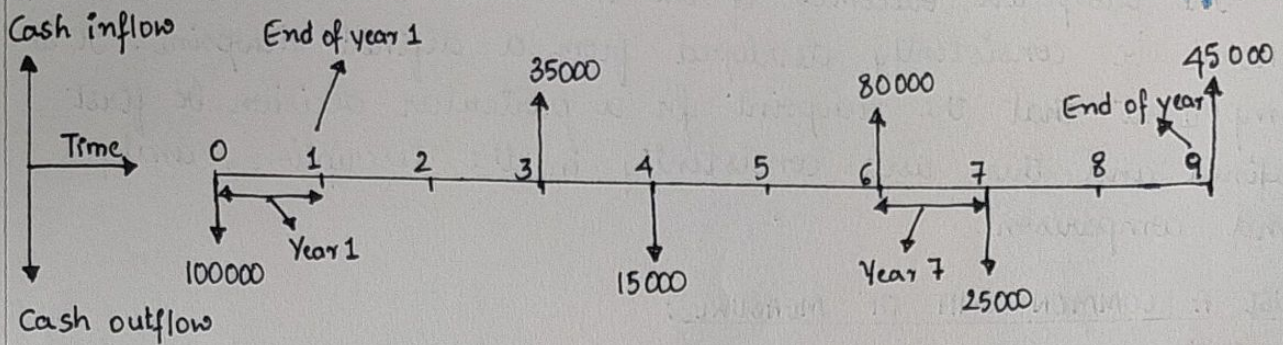
Q. 7 b]

The graphical representation of the cash flows i.e both cash outflows and cash inflows with respect to a time scale is generally referred as cash flow diagram.

The cash flows are generally indicated by vertical arrows on the time scale. The cash outflows [i.e costs or expense] are generally represented by vertically downward arrows whereas the cash inflows [i.e revenue or income] are represented by vertically upward arrows. In cash flow diagrams, number of interest periods is shown on the time scale. The interest period maybe a quarter, a month or a year. All the cash flows are assumed to occur at the end of an interest period. -3M



The numbers on the time scale represent the end of year [EOY]



Cash flow diagram

In the above fig, the cash outflows are ₹100,000, ₹15,000 and ₹25,000 occurring at the end of year [EOY] '0' i.e. at the beginning, EOY '4' and EOY '7' respectively. The cash inflows ₹35,000, ₹80,000 and ₹45,000 are occurring at EOY '3', EOY '6' and EOY '9' respectively.

Q.7] The differences between Micro and Macro Economics are as follows:

BASIS OF	MICRO - ECONOMICS	MACRO - ECONOMICS
i. Definition	It is the study of particular firm, particular household, individual price, wage, income, industry and particular commodity.	It concerns with variables such as aggregate volume of the output of an economy, with the extent to which its resources are employed, with the size of national income and with general price level.
ii. Objectives	Optimum allocation of resources.	Full employment and development of economic resources.
iii. Demand depends	Consumer's expectations and the price of particular product.	Household's expectations and the price of all products
iv. Supply depends	Expectations of profits by firms and the price of the good or services	Producer's expectations and total production costs.
v. Nature of activity	It is based on disaggregation.	It is based on aggregation
vi. Assumptions	Assumed that there is full employment	Assumed that the allocation of resources is constant

-2M

-1M

-ANY  
6 pts  
1M each



BASIS OF	MICRO - ECONOMICS	MACRO - ECONOMICS
vii. Equilibrium	Occurs when the quantity demanded equals the quantity supplied.	Occurs when the aggregate demand equals the aggregate supply.
viii. Price	There is a price for each good or service that will clear the market.	There is a price level in an economy at which the aggregate demand will equal aggregate supply.

Q. 8 a] Break even analysis examines the relationship between the total revenue, total costs and total profits of the firm at various levels of output. It is used to determine the sales volume required for the firm to break even and the total profits and losses at other sales level.

It is a method of revenue and total cost functions of the firm. It indicates at what level cost and revenue are in equilibrium. In case of break even analysis, the break even point is of particular importance. Break even point is that volume of sales where the firm breaks even i.e. the total costs equal total revenue. It is, therefore, a point where losses cease to occur while profits have not yet begun. i.e., it is the point of zero profit.

$$\text{BEP} = \frac{\text{Fixed costs}}{\text{Selling price} - \text{variable costs per unit}}$$

#### ASSUMPTIONS:

- All costs are either perfectly variable or absolutely fixed over the entire period of production.
- The volume of production and the volume of sales are equal.
- All revenue is perfectly variable with the physical volume of production.
- The assumption of stable product mix is unrealistic.

Q. 8 b] Calculation of rate of return for alternative A1:

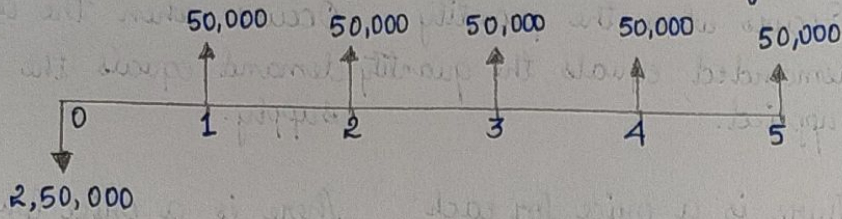
Initial outlay = ₹ 1,50,000

Annual profit = ₹ 50,000

Life = 5 years



The cash flow diagram for alternative A1 is given by:



The formula for the net present worth of alternative A1 is given as

$$PW(i) = -1,50,000 + 50,000 (P/A, i, 5)$$

when  $i = 10\%$ .

$$\begin{aligned} PW(10\%) &= -1,50,000 + 50,000 (P/A, 10\%, 5) \\ &= -1,50,000 + 50,000 (3.79) \\ &= ₹ 39,500 \end{aligned}$$

when  $i = 12\%$ .

$$\begin{aligned} PW(12\%) &= -1,50,000 + 50,000 (P/A, 12\%, 5) \\ &= -1,50,000 + 50,000 (3.60) \\ &= ₹ 30,000 \end{aligned}$$

when  $i = 18\%$ .

$$\begin{aligned} PW(18\%) &= -1,50,000 + 50,000 (P/A, 18\%, 5) \\ &= -1,50,000 + 50,000 (3.12) \\ &= ₹ 6,000 \end{aligned}$$

when  $i = 21\%$ .

$$\begin{aligned} PW(21\%) &= -1,50,000 + 50,000 (P/A, 21\%, 5) \\ &= -1,50,000 + 50,000 (2.92) \\ &= ₹ 4,000 \end{aligned}$$

∴ The rate of return of the alternative A1 is,

$$\begin{aligned} i &= 18\% + \frac{6,000 - 0}{6,000 - (-4,000)} \times (3\%) \\ &= 18\% + 1.8\% \\ &= 18.80\% \end{aligned}$$

Calculation of rate of return for alternative A2:

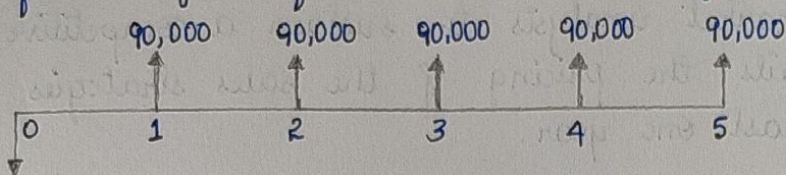
Initial outlay = ₹ 3,10,000

Annual profit = ₹ 90,000



Life of alternative A2 = 5 years

The cash flow diagram for alternative A2 is given by,



The formula for the net present worth of this alternative is,

$$PW(i) = -3,10,000 + 90,000 (P/A, i, 5)$$

when  $i = 12\%$ ,

$$PW(12\%) = -3,10,000 + 90,000 (P/A, 12\%, 5)$$

$$= -3,10,000 + 90,000 (3.60)$$

$$= ₹ 14,000$$

when  $i = 15\%$ ,

$$PW(15\%) = -3,10,000 + 90,000 (P/A, 15\%, 5)$$

$$= -3,10,000 + 90,000 (3.35)$$

$$= ₹ 8500$$

∴ The rate of return of alternative A2 is,

$$i = 12\% + \frac{14000 - 0}{14000 - (-8500)} \times (3\%)$$

$$= 12\% + 1.86\%$$

$$= 13.86\%$$

The rates of return for the two alternatives are:

ALTERNATIVE	A1	A2
RATE OF RETURN	18.8%	13.86%

From the data above, among the alternatives A1 and A2, the rate of return of alternative A1 is greater than that of alternative A2. Hence, alternative A1 should be selected.

Q. 9 a] The stages in the Entrepreneurial process are as follows:

#### STAGE I: CONDUCTING OPPORTUNITY ANALYSIS

In this stage, the founder identifies the opportunity and creates a vision for the company. The entrepreneur weighs the real



value and perceived value of opportunity against the risk and return of the same. The entrepreneur tries to build the vision and conduct market analysis to sustain a competitive advantage. This stage details the pricing of the sales strategies required and takes atleast one year.

-2M

#### STAGE II : DEVELOPING THE PLAN AND SETTING UP THE COMPANY

In this stage, the ideas are converted into business strategies which are documented and converted to a business plan. The focus of this stage is writing a well-conceived business plan, detailing how the vision and the market analysis will become a sustainable competitive advantage. At this stage the type, form and the structure of the company are determined.

-2M

#### STAGE III : ACQUIRING FINANCIAL PARTNERS AND SOURCES OF FUNDING

Entrepreneurs may not be aware of any financing options and sources available. Hence, it is important to know the expectations, requirements and sources of funds, so as to finance the venture. Funding sources include self-funding, family and friends, venture capital and government sources. He should also be aware of private placement, capital issue and sources of debt financing.

-2M

#### STAGE IV : DETERMINING RESOURCES REQUIRED AND IMPLEMENTING THE PLAN

Varieties of resource that are needed are to be first estimated. The critical resources are to be differentiated from others. In this stage, the appraisal of the entrepreneur's present resources is done at first. Needed resources are to be acquired and arranged in a timely manner for the success of the enterprise. While acquiring other funds care should be taken that the funds are available as a cheaper cost and there is least loss of control.

-2M

#### STAGE V : SCALING AND HARVESTING THE VENTURE

In this stage the risks faced by an entrepreneur and pros and cons of each decision taken is weighed. Screening of



different types of technologies, development of growth strategies, talent building, seeking capital. etc are covered in this stage. Options available for entrepreneurs to scale the venture, merging with another company, implementing leverage buy out or selling the company as an exit strategy are considered.

-2M

Q.9 b) A typical outline of the project report should be as follows:

SECTION - A : INFORMATION ABOUT THE ENTREPRENEUR

SECTION - B : INFORMATION ABOUT THE PROJECT

SECTION - C : INFORMATION ABOUT THE BUSINESS

SECTION - D : DETAILS OF THE PROPOSED PROJECT

-2M

Planning commission of India has issued some guidelines for preparing / formulating realistic project reports, which are as follows:

i. GENERAL INFORMATION :

The feasibility report must include the analysis of the industry to which it belongs. The report should deal with description of type of industry, its priority, past performance, increase in production, role of public sector, technology, allocation of funds and information about the enterprise.

-1M

ii. PRELIMINARY ANALYSIS OF ALTERNATIVES :

The details like gap between demand and supply of proposed products, availability of capacity, list of all existing plants in industry, indicating their capacity, level of production attained, list of present projects and list of proposed projects. All technically feasible options are considered here.

-1M

iii. PROJECT DESCRIPTION :

The feasibility report should provide a brief description of the technology / process selected for the project, information pertaining to the selection of optimal location, population, water, land, environment, pollution and other environmental problems. etc., are to be provided.

-1M

The report should contain details of operational requirements of the plant, requirement of water, power, personnel, land, transport, construction details for plant and offices. etc.



iv. MARKETING PLAN:

The details like marketing plan, demand, target price of product, distribution methods, etc. are to be presented. -1M

v. CAPITAL REQUIREMENTS AND COSTS:

Information with regard to capital requirement and costs with breakup are to be provided. The estimates should be realistic and based on logical information. -1M

vi. FINANCIAL ANALYSIS:

It is essential to assess the financial viability of the project. A preformat balance-sheet, details of depreciation, clearance for foreign exchange, details of any income tax rebate, incentives for back work areas are to be included. -1M

vii. ECONOMIC ANALYSIS:

Social profitability analysis is to be made. Impact of the operations on foreign trade, direct costs and benefits are to be included in the report. -1M

viii. MISCELLANEOUS ASPECTS:

Depending upon the nature and size of operation of a particular or project, any other relevant information may be included in the project report. -1M

Q. 10

a) A timely availability of adequate venture capital plays a crucial role in encouraging entrepreneurial activity in any society. The important role played by venture capital in the overall well-being of a country is as follows:

i. Venture capital opens new avenues for deserving entrepreneurs:

Venture capital is provided to entrepreneurs who have conceived excellent business ideas, have sound knowledge of the specific business, but lack financial resources to implement them. The venture capitalist will: -2M

- arrange development finance to accelerate early growth of their businesses.
- supply funds for faster expansion of their already growing ventures.



ii. Venture capital is provided after reducing uncertainty to risks:

Before taking any decision on investment, a venture capital firm will satisfy itself with not only the entrepreneur's qualifications, technical and managerial competence, but also the techno-economic viability of the proposed project, including marketing prospects of the concerned product or service.

Venture capital is provided only after ensuring a high rate of return on the investment under risky business conditions. Availability of venture capital to a business on the basis of its merits implies safety and security of investment.

iii. Helps building entrepreneurial vision:

Many societies around the globe show a lower preference for adopting entrepreneurship as careers. Children belonging to middle and lower middle class families with money constraints are rather encouraged to take up employment.

iv. Mobilisation of small savings:

The small investors in their individual capacity do not possess the professional expertise to analyse the risk factor involved in high-risk investment like venture capital. Investment organisations help them by providing the required computations and analysis.

v. Results in socio-economic benefits:

Besides bringing about direct gains in the form of growth of individual businesses through profitability and expansion, venture capital helps achieving a number of socio-economic goals. It opens up the path to the overall social up-liftment by creating job opportunities, removing poverty, facilitating support to innovation and creativity, fulfilling ambition of entrepreneurship minded people and transforming education system into action-oriented industry.

Q. 10

b] The functions and objectives of KIADB are as follows:



i) Karnataka Industrial Area Development Board [KIADB]:

OBJECTIVES:

- To establish industrial areas and promote rapid and orderly establishment of industries in the state of Karnataka.
- To provide infrastructural facilities and amenities to SSIs.
- To assist in implementation of government policies.
- To function on 'No profit - No loss' basis.

-2.5M

FUNCTIONS:

- To acquire lands for industrial activity at identified and notified locations and form industrial area with all infrastructure facilities like road, electricity power, water supply.
- To acquire lands in favour of single unit.
- To acquire lands for single unit complexes for government organizations and to facilitate government projects.
- To provide all the infrastructure facilities to such industrial areas.
- To maintain the infrastructural facilities during the contractual project.

-2.5M

ii) Technical Consultancy Services Of Karnataka [TECSOK]:

OBJECTIVES:

- To provide reliable consultancy support for entrepreneurs to startup self-employment ventures in Karnataka.
- To provide consultancy services to the various Departments and Agencies of state and Central Governments.

-2.5M

FUNCTIONS:

- To identify investment opportunities which are location specific.
- To assist entrepreneurs in obtaining statutory and procedural clearances.
- To carry out feasibility studies and environmental impact studies.



- To assist preparation of detailed project reports as per investment norms and financial norm.
- To carry out market survey and research specific to industry needs.
- To assist in project implementation and extend turnkey assistance.
- To help in reorganisation and restructuring of employees
- To diagnose sick units and suggest rehabilitation measures.
- To provide consultancy in valuation of assets, manpower, planning and budgetary control system.
- To promote consultancy for merges and take overs.

-2.5M

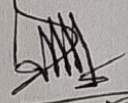
Bhanupriya.N

[Prof. BHANUPRIYA N]

for Laxmi

HoD  
HEAD

Dept. of Civil Engg.  
KLS V.D.I.T., Haliyal

  
DEAN ~~ACADEMICS~~