SCHEME OF VALUATION

(Scoring Indicators)

Revision : 2015 Course Code :TID(15) 5001

Course Title : (5001)INDUSTRIAL MANAGEMENT AND SAFETY

Qst.No.	Scoring Indicator	Split up score	Sub Total	Total
	PART - A			5×2 =10
1.	Define Incentives It is an inducement or a reward which is given to a worker for his efficiency and hard work	2		
2.	Inventory - It is a detailed list of movable goods such as raw materials, materials in process, finished products, general supplies and equipments	2		
3	Industrial maintenance, Civil Construction projects etc.	2		
4.	1) Engineering 2) Education 3) Enlistment 4) enforcement.	2		
5.	$\left(\frac{\text{No. of workers left the organisation during the period}}{\text{Avg. no. of workers in the organisation during the period}} \times 100\right)$	2		
	PART - B			5×6 =30
1.	Different types of ownerships a) Sole proprietorship - The business which is owned and controlled by a single person with or without hired labour. b) Partnership - relationship between persons who have agreed to share the			

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	capital and profits of business carried on by all or any of them acting for all.	1		
	c) join stock company - It is a association of individuals called share holders, who join together for profit and agree to supply capital divided into shares that are transferable for carrying on a specific business.	1 1 1		
	d) cooperative Society - voluntary organisation of persons of same working class united together with collectively own funds in order to get commodities of daily use.	1	6	
	(e) central or state owned companies.			
2.	objectives of quality audit			
	a) study the quality of the existing systems and find out the non conformity with the quality system.	1 1		
	b) suggest the corrections to be done in different areas and operations	1		
	c) propose and implement methods as per Iso standards	1		
	d) to evaluate a supplier before entering a contract with him	1		
	e) suggest best procedures and practices.	1		
	f) reduce the loss of money due to duplication of activities, high repairs etc.	1	6	
3.	CPM: used where the emphasis is optimizing resource allocation and minimizing overall cost. / PERT: used where the emphasis is on shortening project execution time.	1		

	CPM	PERT		
	2. A deterministic model with well known activity time	A probabilistic model with uncertainty in activity duration.	1	
	3. activity oriented	event oriented	1	
	4. The use of dummy activities is not necessary	dummy activities is required for representing the proper sequencing	1 1	
	5. Suitable for industrial maintenance, Civil construction projects	Suitable in defence projects, R and D	1	6
4.	Concept of DSIR Department of Scientific and Industrial Research have the programmes of 1) Technology Development and Demonstration programme 2) Technology Management programme (TMP) 3) Fiscal Incentives - eg:- Duty free import etc. Concept of TBI Technology Business Incubators. It provide infrastructural and support facilities to start-up enterprises. It is one of the activities of National science and Technology Entrepreneurship Development Board. It assist technology oriented entrepreneurs in the start up and early development stage of their firms by providing workspace, shared facilities etc.		3 3	6
5.	Student entrepreneur — After formal education, moves to ~~stage~~ ~~employment or~~ self employment. Govt. of India introduce entrepreneurial development as a subject in engineering graduates to become entrepreneurs. In Kerala Innovation and development Cell in colleges. Nodal officers from these colleges will trained the students to become innovators. Sept 12 declared as entrepreneurship day. Universities give graace marks to students start ups to build their career.		1 1 1 1 1 1 1	6

6	Centralised and decentralised stores Centralised store - using in small factories, materials are centralised, may brought under the control of one store keeper, store room is near to place where material is to be used. De centralised - used in large factories where there are several departments each using a different type of materials, it becomes beneficial to separate the stores.	1 1 1 1 1 1	6	
7	Job Evaluation It is a systematic process of evaluating different jobs of an organisation. It comparing job with other jobs interms of wages a worker should be paid for performing any task. It determines relative worth and attaches a value for a job. It clarifies the responsibility and authority connected with each job. It provides a basis for recruitment, selection, training etc. It may resolve wage disputes.	1 1 1 1 1 1 1	6	

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	PART C			15x4 = 60
	UNIT-1			
III (a)	i) He developed the principle of breaking a task into elements for timing the same ii) Through time studies he experimented to recognise losses of efficiency in industrial operations. iii) He investigating work on scientific basis, selecting the best worker for a task and training him further to acquire desired skill etc, which led to the concept of scientific management. iv) Taylor undertook studies on fatigue incurred by the workers and the time necessary to complete a task. v) He developed Functional organisation in which one foreman was made incharge for each function. vi) Taylor established work standards vii) introduced and operated various costing systems. viii) He suggested Differential piece Rate plan	1 1 1 1 1 1 1 1	7	
III (b)	Types of wages i) Nominal wages - amount of money paid to a worker in cash for the efforts put in by him in an industry and no other advantage to the worker is made. This is also called "money - wage". Real wage :- These include additional facilities provided to the worker in addition to the cash payment made to him in return for his effort and work. eg :- uniforms, housing etc. ii) Living wages - wages sufficient to meet some of the social requirments of a family like education, food, insurance etc along with prime necessities of life. iv) Fair wages :- It is fair for the work of a worker, provide him with other necessities of life in addition to food for his family. It ranges between minimum wage and living wage Minimum wages :- least amount of remuneration which a worker should be paid so that he can survive and support his family. To fix minimum wages, in India, minimum wages act, 1948 has been in force.	1 1 1 1 1 1 1 1 1 1	8	

IV (a) i) Line or Military or scalar organisation

It is based upon relative authority and responsibility rather than on the nature and kind of operation or activities. 1

The immediate Superior gives orders to the subordinates, assigns duties, dismisses and takes disciplinary action against them. 1

Suitable for Small enterprises. 1

ii) Functional organisation

Here overall responsibility of the enterprise is divided according to the functions to be performed. 1

The whole organisation is divided into a number of functional areas, Such as production, personel purchase etc. Every functional area Serves all other areas in the organisation. 1

iii) Line and staff organisation

Here the line executives retain supervisory authority and control over the work of their - Subordinates where as the staff executives relieve the line executives of certain specialised work and advice them on matters referred to them. 1

Line executives are called "doers" and the staff executives are called "Thinkers". 7

IV (b)

Managenial Functions	operative functions
1. planning	1. procurment of personnel
2. organising	2. Development of personnel
3. Directing	3. Compensation of personnel
4. motivating	4. Integration
5. controlling	5. maintenances.

Planing - deciding in advance what to do in future. man power planing, forecasting the future requirment selection and training planing etc.

organising - provide structure for Company by placing the individuals in managerial jobs as well as operative jobs.

Directing - giving instructions to personnel, develop communication network, interpret various industrial laws and ~~te~~ integrating workers.

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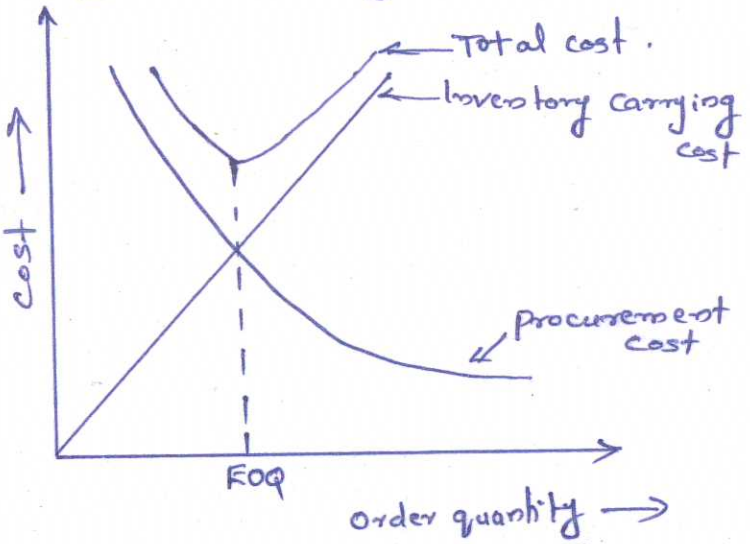
	motivating – motivating employees through vide incentives.	½		
	Controlling – Provides basic data for establish standards, makes job analysis etc.	1		
	Procurement of personnel – process of recruitment, selection, placement etc.	1		
	Development of personnel – includes programmes of performance appraisal, promotion, transfers etc.	1		
	compensation ... – Equitable remuneration in the form of wages, salaries, bonuses etc.	1		
	Integration : Individual, social and organisational goals and interests are properly coordinated and integrated.	1		
	Maintenance : – covers activity relating to employee's health and safety, labour welfare work etc.	1	8	
V(a)	Manthras of TQM			
	1. Quality is never an accident, it is always the result of untiring and intelligent effort.	1		
	2. Quality is like a prayer to God, which never comes out ~~hand~~ without hard work and devotion	1		
	3. Quality is everybody's work.	1		
	4. Take care of quality, quality will take care of every thing	1		
	5. Document is dependable, but, not the – memory.	1		
	6. Quality begins with the cleanliness of the workplace.	1		
	7. Quality is acheived through team work	1		
	8. Quality begins and ends with education	1		
	9. Quality is the attribute that a customer uses to evaluate products and services.	1		
	10. make it right for first time and all times.	1	8	

V (b) Objectives of purchase department

1. maintain regular flow of materials. 1
2. purchase at a competitive price the right quality, in right quantity and at a right time from a right source. 1
3. ensure higher productivity. 1
4. ensure the production of a better quality production at a competitive cost. 1
5. To act for standardisation, variety reduction and value analysis 1
6. To ensure a better margin of profit. 1 — 7

VI (a) Economic order Quantity (EOQ)



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The EOQ is obtained by the quantity whose procurement cost is equal to inventory carrying cost.

$$q = \sqrt{\frac{2AP}{C}}$$

q = EOQ, A = total items consumed/year.
P = procurement cost/order, C = inventory carrying cost per unit.

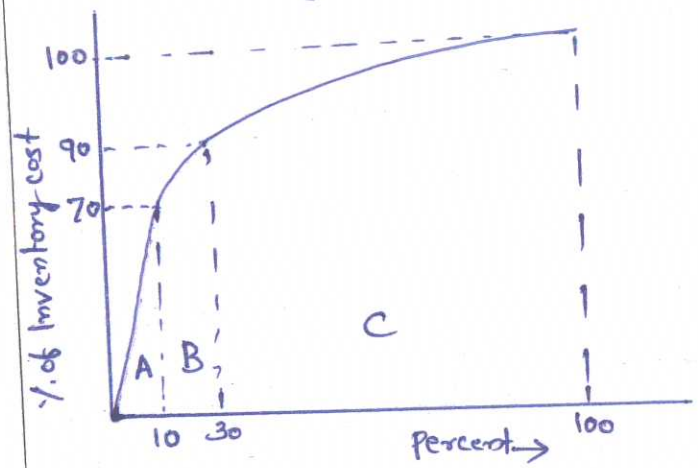
ABC analysis

Here all the items of the industry are divided into three groups. They are

A-class items — high valued but are limited. They constitute 10% of items but account for 70% of total inventory cost.

B class items – medium valued. They constitute 20% of total inventory cost and about 20% of the total items.

C class items – low valued, but maximum numbered items. They constitute 10% of the total inventory cost and 70% of total items.



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VI(b) It is ~~es~~ essentially the art of anticipating what buyers are likely to do under a given set of conditions. 1

Market research plus the analyses of current sales experience and trends form the construction of a sales forecast. 1

It is a commitement on the part of the sales department and each of its divisions of the expected sales likely to be acheived in a given period at stated prices. 1

It should be very accurate because whole train of events following from these. 1

sales forecasting is a basis for developing – marketing action. 1

Accurate forecasts are vital aids to decision making 1

It provide basis for evaluating the functioning and productivity of various segments of business activity.

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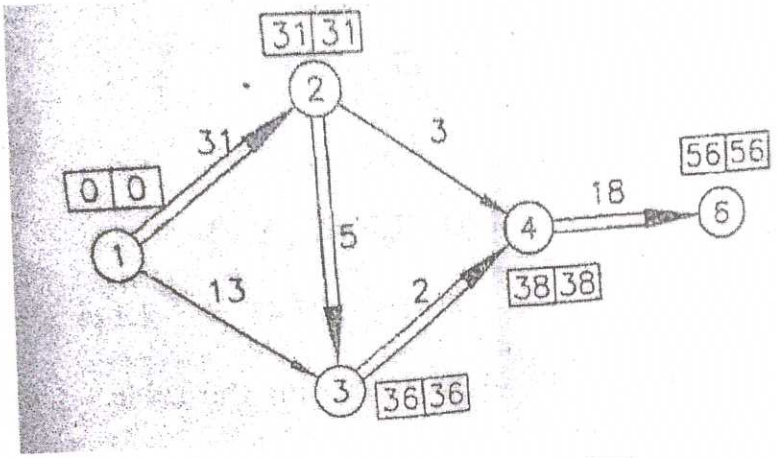
VII (a)



Activity	t_o	t_m	t_p	t_e	
1-2	20	30	46	$\frac{20+4\times30+46}{6}=31$	3
1-3	9	12	21	$\frac{9+4\times12+21}{6}=13$	1
2-3	3	5	7	$\frac{3+4\times5+7}{6}=5$	1
2-4	2	3	4	$\frac{2+4\times3+4}{6}=3$	
3-4	1	2	3	$\frac{1+4\times2+3}{6}=2$	
4-5	12	18	24	$\frac{12+4\times18+24}{6}=18$	

Project duration = 56 days

Critical path = 1 – 2 – 3 – 4 – 5

5

10

VII (b)

It is a subclass of a Linear programming problems. 1

It deals with the objective of transporting various quantities of a single homogeneous commodity initially stored at various orgins to different destinations in a way that keeps transportation cost at a minimum. 2 1

The solution of any transportation problem is obtained in two stages, initial solution and optimal solution. 1

Three methods of obtaining an initial solution include Least cost method, North west Corner Rule and Vogel's Approximation Method. 1

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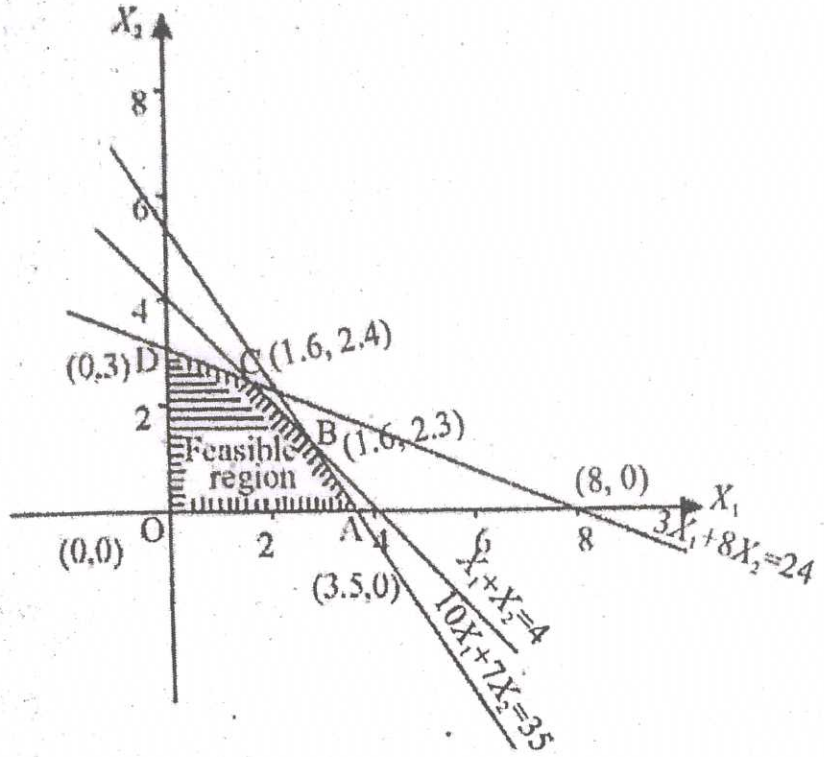
VIII (a)



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The feasible region is $OABCD$.

B and C are points of instruction of lines,

$X_1 + X_2 = 4$, $10X_1 + 7X_2 = 35$

And, $3X_1 + 8X_2 = 24$

On solving we get;

4 10

B (1.6, 2.3)

C (1.6, 2.4)

Corner Points	*Value of* $Z = 5X_1 + 7X_2$
O (0, 0)	0
A (3.5, 0)	17.5
B (1.6, 2.3)	25.1
C (1.6, 2.4)	24.8 (Maximum value)
D (0, 3)	21

∴ The maximum value of Z occurs at C (1.6, 2.4) and the optimal solution is $X_1 = 1.6, X_2 = 2.4$.

ie, Max $Z = 5 \times 1.6 + 7 \times 2.4 = 24.8$

VIII (b) Game theory

The term 'game' represents a conflict between two or more parties.

Game theory is really the science of conflict. 1

Game theory is not concerned with finding an optimum or winning strategy for a particular conflict situation but it provides general rules concerning the logic that underlies strategic behaviour of all types. 1 1

It posses the following properties

1) Number of competitors are finite. 1
2) There is a conflict of interests between the participants.
3) Each of the participants has available to him a finite test of possible course-of action. 1 5
4) The rules governing these choices are specified and known to all players.
5) The outcome of the game is affected by choices made by all the players.

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IX - (a)	List the role of Safety Council make it clear to all levels of supervision and to all workers that management is behind the safety programs. provide a safe and healthy place to work including – safe equipment and tools safe guard machinery process and operations are planned with respect to safety. Inspection system to discover and correct all hazards. provide training to develop safe work habits in all levels. Investigating of all accidents. reporting of accidents to the proper authorities. development of acident statistics, first aid - treatment	1 1 1 1 1 1 1 1	7	
IX (b)	Functions of an Entrepreneur 1) perceives opportunities for profitable investment. 2) Explores the possibilities and prospects of starting such a manufacturing enterprise. 3) obtains required industrial license. 4) manage and take decisions on plant site plant site, operations etc. 5) promote new inventions and coordinates different factors of production. 6) Arrange input materials, machinery and finance required for the enterprise. 7) employs worker of requsite skills. 8) Deals with govt. departments like sale tax, electricity etc. 9) pay wages to workers, and also with books. 10) Marketing the products	1 1 1 1 1 1 1 1 1 1	8	

X (a)	Failure of entrepreneurial Ventures 1) No clear cut vision. 2) Improper management of finance. 3) Allowing friends and family to interfere in business decisions. 4) Lack of management skills. 5) Not maintaining secrets. 6) Not employing the right personnel. 7) Inconsistency and lack of honesty. 8) over promising and under delivering. 9) lack of quality and attention. 10) product design problems. 11) I can do well all by myself.	1 1 1 1 1 1 1 1 1	7	
X (b)	Causes of Accident 1] Technical causes (Unsafe Conditions) - deficiencies in plant, tool, material handling system, general environment etc. a) Mechanical factors i) unsafe mechanical design. ii) Hazardous arrangement iii) Improper machine guarding. iv) defective devices. v) Improper material handling. b) Environmental factors - i) low or high tempratures. ii) humidity differences. iii) in adequate illumination. iv) presence of dust v) In adequate breaks between the working hours. 2] Human causes - Due to ignorance, carelessness of person. c) personal factors. i) age ii) Health iii) financial iv) borde ~~iev~~ environment (v) lack of knowledge vi) High anxiety etc.	2 2 2 2	8	