Name: Enrolment No:	UPES

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

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Programme Name: B.Tech ADE **Semester : VI**
Course Name : Industrial Engineering and Management **Time : 03 hrs**
Course Code : MEPD 3001 **Max. Marks: 100**
Nos. of page(s) : 3 **Instructions:**

SECTION A

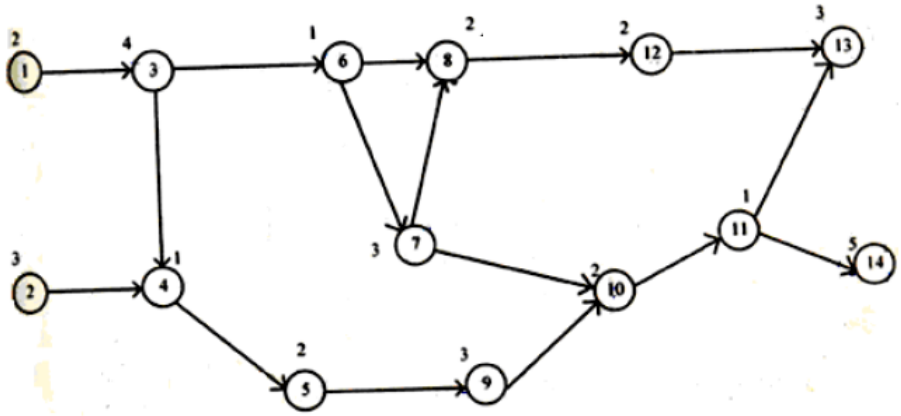
S. No.		Marks	CO
	Which of the following industries should be located near the vicinity of raw materials? A. Cycles B. Televisions C. Sewing machines D. **Steel mills** **"Space available in vertical and horizontal directions is most effectively utilized" is known as principle of** **A. Cubic space utilization** **B.** Flexibility **C.** Flow **D.** Minimum distance **If all the processing equipment and machines are arranged according to the sequence of operations of a product the layout is known as** **A. Product layout** **B.** Process layout **C.** Fixed position layout **D.** Combination layout **The following type of layout is preferred to manufacture a standard product in large quantity** **A. Product layout** **B.** Process layout **C.** Fixed position layout **D.** Combination layout **In ship manufacturing, the type of layout preferred is** A. Product layout B. Process layout C. **Fixed position layout** D. Combination layout **This chart is a graphic representation of all the production activities occurring on the shop floor**	**7**	**CO1**

	A. Operation process chart B. Flow process chart C. Templates D. All of the above **Which of the following is not a part of Five M's?** A. Material B. Machine C. **Motion** D. Method		
	The correct sequence of operations in production planning and control is **A. Routing-Scheduling-Dispatching-Follow up** **B.** Scheduling-Routing- Dispatching-Follow up **C.** Dispatching-Routing-Scheduling- Follow up **D.** Routing-Scheduling-Follow up-Dispatching **Which of the following is true for 'Routing'?** A. It is flow of work in the plant B. Route sheets include list of machine tools that are to be followed C. It depends upon material handling facilities D. **All of the above** **Loading may be defined as** A. Sending the raw material to the machine B. Sending the finished material to the store C. **Assign the work to the facilities** D. Uploading a software in machine control panel **Dispatching authorizes the start of production operations by** i. Release of material and components from stores to first process ii. Release of material from process to process iii. Issue of drawings instruction sheets Which of the following is (are) true? A. Only i B. Only ii C. i & ii D. **i , ii & iii** **The bill of material does not consists of** **A.** Part number B. Specifications of part C. Name of the part **D. Price of the part** **Procurement cycle time is time consumed for** A. Receiving of raw material B. Inspection of various raw materials C. Inspection of purchased components parts **D. All of the above** **The transit time consist of** A. Time taken by raw material from machine to machine	**9**	**CO3**

	B. Time consumed in moving the work between various departments C. Time taken by a worker to machine a component **D. None of the above** **Master schedule is prepared for** A. Single product continuous production B. Multi product batch production C. Assembly product continuous production D. Single product batch production **Which of the following chart is drawn Machine vs time?** A. Man machine chart B. The load chart C. The progress chart E. Curve chart		
	Henery Fayol, F.W. Taylor belongs to which of the following school of management? (a) Neoclassical School (b) Modern School **(c) Classical school** (d) Early School Which of the following statements best defines the techniques of management? (a) It is a set of guidelines to take decisions and actions. (b) **It is a procedure which involves a series of steps to be taken.** (c) They are general rules for behaviour of individuals. (d) None of the above. The principles of management have been developed on the basis of (a) Observation (b) Experimentation (c) Personal experiences of the manager (d) **All of the above** Which of the following statements is/are true with reference to principles of management? (a) The principles are guidelines to action. (b) The principles denote a cause and effect relationship. (c) Principles help the manager to take decisions while performing various management functions. (d) **All of the above.** The principles of management are intended to be applied to all types and sizes of organisations. This statement reflects that the principles of management are (a) General guidelines (b) Flexible (c) **Universally applicable** (d) Mainly behavioural	**6**	**CO5**

	The principles of management do not provide readymade straight jacket solutions to all management problems because (a) The real business situations are complex. (b) The real business situations are dynamic. (c) The principles act as general guidelines. (d) **All of the above.**		
	_____ is the process of forecasting an organizations future demand for, and supply of, the right type of people in the right number. **a. Human Resource Planning** b. Recruitments c. Human Resource Management d. Human Capital Management **Which of the following factors state the importance of the Human Resource Planning?** a. Creating highly talented personnel b. International strategies c. Resistance to change and move **d. All of the above** **A process that is used for identifying and developing internal people with the potential to fill key business leadership positions in the company is called _____.** a. Highly talented personnel creation b. Investing in human resources **c. Succession planning** d. None of the above **State true or false** i. Human Resource Planning facilitates international expansion strategies. **a. True** b. False	**3**	**CO5**
	Section B		
Q 1	The number of dietary errors is found from a random sample of 100 trays chosen on a daily basis in a health care facility. The data for 25 such samples are shown in Table below. (a) Construct an appropriate control chart and comment on the process. (b) How many dietary errors do you predict if no changes are made in the process? (c) Is the system capable of reducing dietary errors to 2, on average, per 100 trays, if no changes are made in the process?	**15**	**CO2**

Sample Number	Number of Dietary Errors	Sample Number	Number of Dietary Errors
1	9	14	8
2	6	15	8
3	4	16	7
4	7	17	6
5	5	18	4
6	6	19	12
7	16	20	7
8	8	21	6
9	7	22	8
10	9	23	6
11	3	24	8
12	6	25	5
13	10		

Q2	Design the work stations for an assembly line shown below. Use Rank position weighted method. Also calculate the line efficiency. Take cycle time as 10 minutes. 	**15**	**CO3**
Q3	The bore size on a component to be used in assembly is a critical dimension. Samples of size 4 are collected and the sample average diameter and range are calculated. After 25 samples, we have $\sum_{i=1}^{25} \overline{X_i} = 107.5$ $\sum_{i=1}^{25} R_i = 12.5$ Data given: $D_3 = 0$; $D_4 = 2.282$; $A_2 = 0.729$; $d_2 = 2.059$ The specifications on the bore size are 4.4 ± 0.2 mm. The daily production rate is 1200. (a) Find the *X-bar* and R-chart control limits. (b) Assuming that the process is in control, estimate its standard deviation. (c) Find the proportion of scrap and rework.	**15**	**CO2**

	(d) If the process average shifts to 4.5 mm, what is the impact on the proportion of scrap and rework produced? A welding operation is time-studied during which an operator was pace-rated as 120%. The operator took, on an average, 8 minutes for producing the weld-joint. If a total of 10% allowances are allowed for this operation, Calculate the expected standard production rate of the Weld-joint (in units per 8 hour day).		
Q4	A. Which level of management was focused by Fayol and Taylor? Explain functions of that level of management. B. Discuss the relevance of Taylor and Fayol's contribution in the contemporary business environment.	**15**	**CO4**
Q5	A. Explain how TQM is different from traditional notions of quality. B. Briefly explain following five principles of management of Henry Fayol: (a) Scalar chain (b) Esprit de corps (c) Order (d) Unity of direction (e) Initiative C. Explain the Mintzberg's managerial roles.	**15**	**CO2, CO5**