Reg.No. \_\_\_\_\_\_\_\_\_\_\_\_



**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

**Supplementary Examination – June – 2017**

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| **Code :** | **14ME2043** | **Duration :** | **3hrs** |
| **Sub. Name :** | **INDUSTRIAL ENGINEERING** | **Max. marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

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| Q. No. | Sub Div. | Questions | Course  Outcome | Marks |
| 1. | a. | Name any tools of work measurement. | CO 1 | 1 |
| b. | Define work study. | CO 1 | 1 |
| c. | How to calculate performance rating? | CO 1 | 2 |
| d. | List out any two allowances adopted in time study. | CO 1 | 2 |
| e. | (i) Enumerate the procedure of Method study. (7)  (ii) Discuss the salient features of any one flow process chart with an example. (7) | CO 1 | 14 |
| (OR) | | | | |
| 2. | a. | Distinguish production and productivity. | CO 2 | 1 |
| b. | State the objective of ‘Productivity Bargaining’. | CO 2 | 1 |
| c. | The following information regarding the output produced and inputs consumed for a particular time period for particular company given below  Output Rs 10,000  Human Input Rs 3000  Material Input Rs 2000  Capital Input Rs 3000  Energy Input Rs 1000  Compute the possible productivity indexes/ratios. | CO 2 | 2 |
| d. | Justify this statement “ Increase in production is need not be equivalent to Increase in productivity”. | CO 2 | 2 |
| e. | |  |  |  | | --- | --- | --- | | Items | 2015  profile | 2016  profile | | Number of frames produced | 240,000 | 250,000 | | Labor hours used | 60,000 | 50,000 | | Materials used  kilogram (kg) | 1,200,000 | 1,200,000 | | Unit  selling price | Rs 30 | Rs 30 | | Wages per labor hour | Rs 15 | Rs 15 | | Cost per kilogram (Kg).of material | Rs 3 | Rs 3.50 |   i) The following table shows the data about production volume and raw material used by a company for two calendar years 2015 & 2016  Compute the labour productivity ratio and material productivity ratio for the years 2015 & 2016 ( 4 marks)  Compute also PQ of labour and material for the year 2016 by keeping 2015 as base period ( 4 marks)  **ii)** Evaluate the features of Job, Batch and mass production (6marks) | CO 2 | 14 |
| 3. | a. | Differentiate product lay out and procees lay out. | CO 2 | 1 |
|  | b. | Define cellular lay out. | CO 2 | 1 |
|  | c. | List any two features of fixed position layout. | CO 2 | 2 |
|  | d. | What is group technology. | CO 2 | 2 |
|  | e. | Discuss the various features of product lay out and procees lay out with suitable block diagrams. | CO 2 | 14 |
| (OR) | | | | |
| 4. | a. | What are the constituents of inventory? | CO 2 | 1 |
|  | b. | FSN stands for-------------- items. | CO 2 | 1 |
|  | c. | Write a note on Economic Ordering Quantity. | CO 2 | 2 |
|  | d. | Define Buffer stock and Re order point. | CO 2 | 2 |
|  | e. | Discuss the various approaches of inventory control with suitable examples. | CO 2 | 14 |
| 5. | a. | Write the objective of production planning control. | CO 2 | 1 |
|  | b. | How the critical ratio ariived in priority control? | CO 2 | 1 |
|  | c. | List the outcome of Master production schedule. | CO 2 | 2 |
|  | d. | What is the outcome of Aggregare production plan? | CO 2 | 2 |
|  | e. | Enumerate the various stages of production planning control. | CO 2 | 14 |
| (OR) | | | | |
| 6. | a. | Differentate MRP I and MRP II. | CO3 | 1 |
|  | b. | What is the outcome of shop floor control? | CO3 | 1 |
|  | c. | Distinguish MRP and ERP. | CO3 | 2 |
|  | d. | How inventory control is so vital for Productio planning? | CO3 | 2 |
|  | e. | Expound Material Requirement panning with block diagrsms. | CO3 | 14 |
| 7. | a. | What is the need for sampling inspection? | CO3 | 1 |
|  | b. | Differentiate sample size and number of samples. | CO3 | 1 |
|  | c. | What is the difference between variable control chatrts and attribute control charts? | CO3 | 2 |
|  | d. | Define process capability. | CO3 | 2 |
|  | e. | Construct one variable control chart with suitabl values. | CO3 | 14 |
| (OR) | | | | |
| 8. | a. | State the definition of relablity. | CO3 | 1 |
|  | b. | List any two causes of failure. | CO3 | 1 |
|  | c. | Classify the natures of failure. | CO3 | 2 |
|  | d. | Describe the measures of reliability. | CO3 | 2 |
|  | e. | (i)Find the total Reliabity of the system given below (10)  R (A) =0.9  R(C)=0.7  rrrR (A) =0.9  rrRR(c) =0.7  R (B) =0.8  (ii)An electronic device is operated by 5 dry cells. The cells are connected in series .The probability of the successful operation of each cell under given operating conditions is 0.90. calculate the reliability of the electronic device (4) | CO3 | 14 |
|  | | **Compulsory:** |  |  |
| 9. | a. | Name any one application of Computer Aided Process Planning. | CO3 | 1 |
|  | b. | Define strategic management. | CO3 | 1 |
|  | c. | Recognise the use of Business process reengineering. | CO3 | 2 |
|  | d. | State the objective of SCM. | CO3 | 2 |
|  | e. | Appraise the principles of SWOT analysis. | CO3 | 14 |

ALL THE BEST