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4479**BOARD DIPLOMA EXAMINATION, (C-14)****MARCH/APRIL-2019****DME - FOURTH SEMESTER EXAMINATION****INDUSTRIAL ENGINEERING**

Time: 3 Hours]

[Max Marks: 80

PART -A**3x10=30M****Instructions:** 1) Answer **all** questions.2) Each question carries **Three** marks.

3) Answers should be brief and straight to the point and shall not exceed five simple sentences.

- 1) Define Work study. List out two important techniques adopted in work study.
- 2) Differentiate between cycle graph and chrono-cycle graph.
- 3) Define standard data. State two uses of standard data.
- 4) List three advantages of PMTS.
- 5) Define the term job evaluation? State the purpose of job evaluation.
- 6) Define the term merit rating? State the purpose of merit rating.
- 7) Define the term Wage. List out two types of wages.
- 8) Define incentive. List out two objectives of incentive plans.
- 9) Distinguish between quality control and inspection.
- 10) List out causes for erratic fluctuations in the production process with examples.

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PART-B

5x10=50M

- Instructions:** 1) Answer any **five** questions.
2) Each question carries **ten** marks.
3) Answers should be comprehensive and the criterion for valuation is the content but not the length of answer.

- 11) (a) What is a SIMO chart? List out applications of SIMO chart. 4M
(b) Prepare a SIMO chart for a bolt and nut assembly in a manufacturing unit. 6M
- 12) (a) What is a multiple activity chart? List out objectives of multiple activity chart. 4M
(b) Prepare a man machine chart to perform activities between two machines. 6M
- 13) (a) Define standard time. How the standard time is calculated from observed time. 4M
(b) Explain with a sketch the procedure of conducting time study by using a stop watch. 6M
- 14) (a) Explain briefly (i) Rating scale method
(ii) Employee comparison methods of evaluating merit rating. 4M
(b) Explain (i) Job analysis (ii) Job description. 6M
- 15) (a) Explain Halsey Premium Incentive Plan? List out two advantages of the plan. 4M
(b) The standard time for a job is 8 hours and the hourly rate is Rs.15. Compute 6M
(i) The total wage of the worker
(ii) Earning of the worker per hour, if he completed the job in 6 hours by Rowan Incentive Plan.

- 16) (a) Define Work sampling. State two advantages and disadvantages of work sampling. 5M
 (b) Explain five reasons of wage differentials. 5M

- 17) The following data was recorded for constructing Mean and Range charts. Sample Size is 6. Number of samples are 12. Calculate
 (a) Upper and Lower control limits
 (b) Draw Mean and Range charts.
 (c) Comment on the process. 4+4+2=10M

sample number	1	2	3	4	5	6	7	8	9	10	11	12
Mean, \bar{x}	325	315	285	510	410	300	430	290	210	250	350	325
Range, R	42	46	62	43	62	75	51	39	42	58	38	37

- 18) (a) Explain the procedure for accepting a lot by single sampling plan with the help of a flow chart. 4M
 (b) Explain floor inspection system. List its advantages and disadvantages. 6M

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