S.D.E.

**M.B.A. SEM-I (2016 COURSE)(3 YEAR COURSE) : WINTER - 2017**

**SUBJECT: MANAGEMENT SCIENCE AND DECISION TECHNOLOGY**

Day: **Tuesday** Time: **10.00 A.M. TO 1.00 P.M.**

Date: **12/12/2017** **W-2017-4253** Max. Marks: 70

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**N.B.:**

1) Attempt any **FOUR** questions from Section – I and any **TWO** questions from section –II.
2) Figures to the right indicate **FULL** marks.
3) Answers to both the sections should be written in **SEPARATE** answer books.
4) Use of non-programmable **CALCULATOR** is allowed.
5) Graph papers and statistical tables will be provided if necessary.

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## SECTION-I

**Q.1** Discuss contribution of Scientific Management School to management thoughts. **(10)**

**Q.2** What is Management Science approach? What are its assumptions? **(10)**

**Q.3** What do you understand by Central Tendency? Under what conditions is median more suitable than other measures of Central Tendency? **(10)**

**Q.4** Indicate the difference between decision making under risk and uncertainty in statistical decision theory. **(10)**

**Q.5** Write short notes on any **TWO** of the following: **(10)**

**a)** Assignment Problem
**b)** Applications of LPP
**c)** Correlation
**d)** Behavioural Science School

## SECTION-II

**Q.6** What is Simulation? Discuss advantages and limitations of Simulation Technique. **(15)**

**Q.7** A self- service store employs one cashier at its counter. Nine customers arrive on an average every 5 minutes while the cashier can serve 10 customers in 5 minutes. Assuming Poisson distribution for arrival rate and exponential distribution for service rate, find: **(15)**

i) Average number of customers in the system.
ii) Average number of customers in queue or average queue length.
iii) Average time a customer spends in the system.
iv) Average time a customer waits before being served.

**Q.8** A company is making two products A and B. The cost of producing one unit of product A and B is Rs. 60 and Rs. 80 respectively. As per the agreement, the company has to supply at least 200 units of product B to its regular customers. One unit of product A requires one machine hour whereas product B has machine hours available abundantly within the company. Total machine hours available for product A are 400 hours. One unit of each product A and B requires one labour hour each and total of 500 labour hours are available. The company wants to minimize the cost of production by satisfying the given requirements. Formulate the problem as a Linear Programming Problem. **(15)**

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