Day	: Thursday		Time : 02.00 PM TO 05.00 PM
Date	: 02/05/2019	**S-2019-4886**	Max. Marks : 80

N.B.

1) Attempt any **FIVE** questions from Section –I . Each question carries 10 Marks.
2) Attempt any **TWO** from Section –II . Each question carries 15 marks.
3) Use of scientific calculator and graph paper is allowed
4) Answers to both the sections should be written on $S/\!\!/M\,E$ answer book.

SECTION – I

Q.1 If income tax (T)varies as the square of the excess (E) of a employee's **(10)** income over Rs. 3,000 and on an income of Rs. 6,000 it amounts to Rs. 100 , find how much income tax a particular employee with an income of Rs.9,000 pay will pay.

Q.2 **a)** In a class of 60 students 28 are girls and rest are boys. Find the percentage of **(05)** girls and boys in the class.

b) Two numbers are in ratio (2/3). Find the number if their sum is 40. **(05)**

Q.3 Calculate the gross pay for month of March of a worker if the regular rate of **(10)** pay is Rs.85 per hour and the worker has worked for 38 hours every week in that month.

Q.4 Find the derivative -
a) If $y = 8x^5 + 4x^3 + 5x^3 - 3x - 8$ **(05)**

b) If $y = x^7 - 6x^3 + 5x^6 + 9x^4 - 5x^3 + 4x$ **(05)**

Q.5 A merchant purchased rice worth Rs. 24600, but (1/3) of the rice was partly **(10)** damaged and at 10% loss. Find the percentage of profit at which remaining rice should be sold, so that he makes 30% profit on entire transaction.

Q.6 **a)** The age of father is 4 years more thrice the age of his son. If the ration .If **(05)** father and his son after 10 years will become 2:1 ,find their present ages.

b) If $\dfrac{x}{y} = \dfrac{8}{9}$ using properties of proportion find the value of **(05)**

Q.7 Write short notes on any **TWO** of the following : **(10)**
a) Chain and trade discounts
b) Applications of Derivatives
c) Arithmetic Progression
d) Simple annuity

Q.8. Find the derivative of y , if $y = \dfrac{\left(x^2 + 2x\right)\sin x}{x+2}$ **(15)**

Q.9 In a company net pay is calculated by considering following formula **(15)**
Net pay = Basic pay +DA +HRA +Incentives -Deduction
The D.A. is paid @55% of basic pay, HRA is paid @25% of basic pay &
incentives are paid @15% of basic pay. Anagha has pay of Rs. 16000 & he
repays his loan Rs. 4000 per month & income tax of Rs. 2000 per month.
Find his net pay.

Q.10 24 men can complete work in 16 days. 32 women can complete same work in **(15)**
24 days. 16 women started working and worked for 12 days. How many more
men are to be added to complete the remaining work in two days?

*   *   *