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Level 3, Sem I, DVOC (Ref. & Air Cond., Auto Servicing, ITM, PT, SD, AMT, FP, EMS)

Subject : Applied Mathematics-I

Time : 3 Hrs. M.M. : 100

SECTION-A

Note: Multiple choice Questions. All questions are compulsory. (5x1=5)

(Course Outcome/CO)

Q.1 If Set A = (5, 6, 7) and Set B ={2, 5, 6} then find AUB=_____.

a) {1,2,3} b) {2,5,6,7}
c) {5,6,7} d) {2,5,6}

Q.2 If two lines are perpendicular then their slops m_1 and m_2 are

a) $m_1 = -m_2$ b) $m_1 \times m_2 = -1$
c) $m_1 = m_2$ d) None of these

Q.3 i^{20}= _____

a) 20 b) -1
c) 1 d) None of these

Q.4 In which quadrant the point (-3,7) lies in one coordinate plane.

a) I Quadrant b) II Quadrant
c) III Quadrant d) IV Quadrant

Q.5 $^5C_5$ =_____

a) 5 b) 1
c) 0 d) None of these

SECTION-B

Note: Short answer type questions. Attempt any six questions out of Eight questions. (5x1=5)

Q.6 Write the general equation of hyperbola.

Q.7 Write the general equation of circle.

Q.8 Notation of null set.

Q.9 The Total number of terms in Binomial expansion of $(3x + y)^8$.

Q.10 3!+4! = _____

SECTION-C

Note: Long answer type questions. Attempt any one questions out of two questions. (6x5=30)

Q.11 express $Z = \frac{1}{3-5i}$ in standard form $x+iy$.

Q.12 If, $^nP_2 = 42$ find n.

Q.13 Find the equation of circle having centre at (-3, -2) and radius=7.

Q.14 Find the slop of line which makes an angle 45^o with x- axis.

Q.15 If 3rd and 7th term of A.P are 15 and 35 then find 10th term.

Q.16 If $f(x) = x^3-4x+13$ find $f(-2)$.

Q.17 Two unbiased coins are tossed simultaneously find the probability of getting two heads.

Q.18 In how many ways can the word 'INDIA' be arranged.

SECTION-D

Note: Long answer questions. Attempt any one questions out of two questions. (1x10=30)

Q.19 Calculate the mode for the following distribution,

Class	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
Frequency	5	8	7	12	28	20	10	10

Q.20 In the expansion of $\left(2x - \frac{1}{x}\right)^9$ find the 7th term from the end.