

2021-July

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EE24BTECH11038 - MALAKALA BALA SUBRAHMANYA ARAVIND

- 16) The value of $\tan\left(2 \tan^{-1} \frac{3}{5} + \sin^{-1} \frac{5}{13}\right)$ is:
- $\frac{220}{21}$
 - $\frac{110}{21}$
 - $\frac{55}{21}$
 - $\frac{20}{11}$
- 17) If (α, β) is the point on $y^2 = 6x$, that is closest to $\left(3, \frac{3}{2}\right)$ then find $2(\alpha + \beta)$
- 6
 - 9
 - 7
 - 5
- 18) Two circles pass through $(-1, 4)$ and their centres lie on $x^2 + y^2 + 2x + 4y = 4$. If r_1 and r_2 are maximum and minimum radii and $\frac{r_1}{r_2} = a + \sqrt{2}b$, then the value of $a+b$ is
- 3
 - 11
 - 5
 - 7
- 19) If $\triangle ABC$ is a right-angled triangle with sides a, b and c and smallest angle θ . If $\frac{1}{a}, \frac{1}{b}$ and $\frac{1}{c}$ are also the sides of the right-angle triangle then find $\sin \theta$.
- $\sqrt{\frac{(3-\sqrt{5})}{2}}$
 - $\frac{(3-\sqrt{5})}{2}$
 - $\sqrt{\frac{(3+\sqrt{5})}{2}}$
 - $\frac{(3+\sqrt{5})}{2}$
- 20) For the natural numbers m, n if $(1-y)^m (1+y)^n = 1 + a_1 y + a_2 y^2 + a_3 y^3 + \dots + a_{m+n} y^{m+n}$ and $a_1 = a_2 = 10$, then the value of $(m+n)$ is equal to
- 88
 - 64
 - 100

d) 80