JEE Main 2024 Daily Practice Questions

Mathematics:

Ques. The surface area of a balloon of spherical shape being inflated increases at a constant rate. If initially, the radius of the balloon is 3 units and after 5 seconds, it becomes 7 units then its radius after 9 seconds is:

1. 9

2. 10

3. 11

4. 12

Let S = $\{\sqrt{n} : 1 \leqslant n \leqslant 50$ and n is odd$\}$.

Let a ϵ S and A = $\begin{bmatrix} 1 & 0 & a \\ -1 & 1 & 0 \\ -a & 0 & 1 \end{bmatrix}$.

If $\sum_{a \epsilon S} \det(\text{adj } A) = 100\lambda$, then λ is equal to :

Ques.

1. 218

2. 221

3. 663

4. 1717

Ques. Bag A contains 2 white, 1 Black, and 3 Red Balls, and Bag B contains 3 black, 2 red, and 'n' white balls. One bag is chosen at random and 2 balls drawn from it at random, are found to be 1 red and 1 black. If the probability that both balls come from Bag A is 6/11, then n is equal to:

1. 13

2. 6

3. 4

4. 3

Physics:

Ques. The approximate height from the surface of the earth at which the weight of the body becomes 1/3 of its weight on the surface of the earth is:

Note, the Radius of the earth R= 6400 KM and $\sqrt{3}$= 1.732

1. 3840 km

2. 4685 km

3. 2133 km

4. 4267 km

Ques. A resistance of 40 Ω is connected to a source of alternating current rated 220V, 50 Hz. Find the time taken by the current to change from its maximum value to the rms value:

1. 2.5 ms

2. 1.25 ms

3. 2.5 s

4. 0.25 s

Ques. A baseband signal of 3.5 MHz frequency is modulated with a carrier signal of 3.5 GHz frequency using the amplitude modulation method. What should be the minimum size of the antenna required to transmit the modulated signal?

1. 42.8 m

2. 42.8 mm

3. 21.4 mm

4. 21.4 m

Chemistry:

Ques. Which of the following is not a broad-spectrum antibiotic?

1. Vancomycin

2. Ampocillin

3. Ofloxacin

4. Penicillin G

Ques. Which of the following is an example of polyester?

1. Butadiene-styrene copolymer

2. Melamine polymer

3. Neoprene

4. Poly-β-hydroxybutyrate-β-hydroxyvalerate