

Past Q. D.

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Rajan Babu Panta
(Rank -30)

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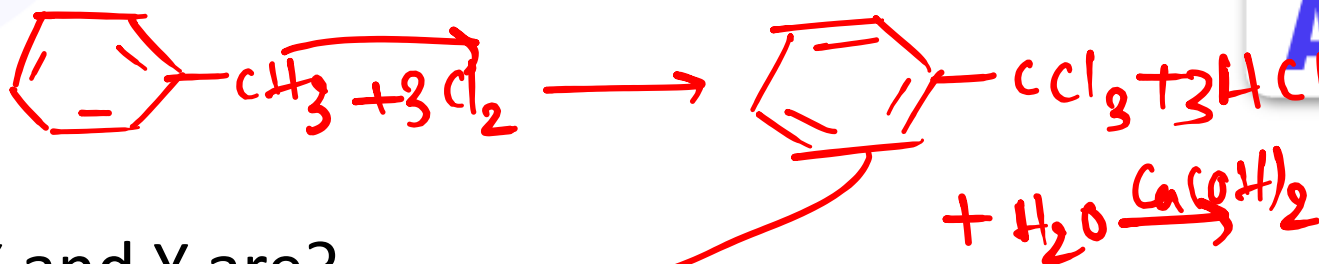
Past Questions Discussions

Date: 14th Kartik, 2080

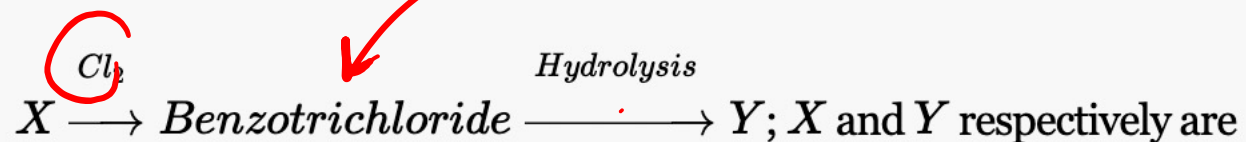
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1) X and Y are?



- ~~a) Toulene and benzoic acid~~
- ~~b) Benzene and Benzaldehyde~~
- c) Toulene and benzaldehyde
- ~~d) Benzene and Benzoic Acid~~

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$$2) \int (\tan^4 \theta + \sec^2 \theta - 1) \cdot d\theta = ?$$

☒ a) $(\tan^3 \theta) \frac{1}{3} + c$
 c) $(\tan \theta) \frac{1}{3} + c$

b) $(\tan^4 \theta) \frac{1}{4} + c$
 d) none

$$\int (\tan^2 \theta + \sec^2 \theta - 1) \cdot d\theta$$

$$\int (\tan^2 \theta (\sec^2 \theta - 1) + \tan^2 \theta) \cdot d\theta$$

$$\int \tan^2 \theta \cdot \sec^2 \theta \cdot d\theta$$

$$\tan \theta = y$$

$$dy = \sec^2 \theta \cdot d\theta$$

$$\int y^2 \cdot dy$$

$$= \frac{y^3}{3} + c$$

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3) $\frac{x^2}{2} + \frac{y^2}{9} = 1$, Focci is?

a) $(\pm\sqrt{7}, 0)$

c) $(\pm\frac{\sqrt{7}}{2}, 0)$

b) $(0, \pm\sqrt{7})$

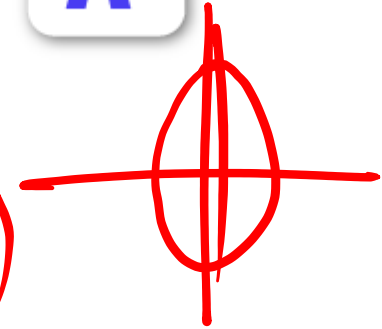
d) none

$$\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$$

$$a = \sqrt{2}, b = 3$$

$$\frac{b^2}{a^2}$$

$$(0, \pm be)$$



$$e = \sqrt{1 - \frac{2}{9}} = \frac{\sqrt{7}}{3}$$

$$(0, \pm \frac{\sqrt{2} \times 3}{3}) = (0, \pm \sqrt{2})$$

$n=1$!

$$\sum \frac{n(n+1)(2n+1)}{6}$$

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4) Sum of Series $1^2 + (1^2 + 2^2) + (1^2 + 2^2 + 3^2) + \dots$ is

$$\frac{1 \times 4 \times 8}{12} = 1$$

~~a) $\frac{n(n+1)^2(n+2)}{12}$~~

b) $\frac{n(n+1)(n+2)^2}{12}$ ~~$\frac{1 \times 2 \times 16}{12} = 6$~~

$n=1$

c) $\frac{n(n+1)^2(n+2)}{6}$

d) none

$$\frac{1 \times 4 \times 8}{6} = 6$$

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$$ax^2 + 2hxy + by^2 + 2gx + 2fy + c = 0$$



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$$g=2: a=1, c=1, b=2$$

5) Distance between the straight lines represented by $x^2 + 2\sqrt{2}xy + 2y^2 + 4x + 4\sqrt{2}y + 1 = 0$ is

$$2\sqrt{\frac{g^2 - ac}{a(a+b)}}$$

(a) 2

b) 3

c) 4

d) 1

$$2\sqrt{\frac{4 - 1 \times 1}{1 \times (3)}}$$

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$7C_3$



3

be selected

6) In how many ways 5 courses out of 9 courses if 2 courses are compulsory?

(a) 42

b) 35

c) 44

d) none

$$\frac{7!}{4! \times 3!} = \frac{7 \times 6 \times 5}{6} = 35$$

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7) ZnO is reduced by

- ☒ (a) Carbon reduction
- ☐ (b) Smelting
- ☐ (c) oxygen
- ☐ (d) None

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$$8) \int_0^1 \log_e(\tan \theta) \cdot d\theta = ? \text{ at } \theta = \frac{\pi}{4}$$

(a) 1

b) 2

~~c) 0~~

d) none

$$\int 0 \cdot d\theta = \int 0 = 0!$$

$$\underline{\underline{(c-c)}}$$

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9) Who discovered Nucleus of atom?

- ☒ a) Ernest Rutherford
- b) Robert Hooke
- c) Thompsons
- d) Rajan Panta

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10)

Sulphuric acid can not be used:

- ☐ A as a pickling agent
- ☐ B in lead storage batteries
- ☐ C in making of Rayon fibre
- ☒ D in preparation of white paint

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$$M = 50.1\% = P(M) = \frac{50}{100} = 0.5$$



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$$P(B) = 0.25$$

$P(M \cap B) = 0.15$ 11) If 50% students takes maths, 25% students takes Biology, 15% takes both maths and Biology. What is the probability that students takes Maths if It is known that he studies biology?

☒ a) ~~3/5~~

b) 4/5

c) 2/5

d) 1

$$P(M/B) = \frac{P(M \cap B)}{P(B)} = \frac{0.15}{0.25} = \frac{3}{5}$$

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12) Molecular formula of Zinc Blende is?

- ~~a) ZnS~~
- b) ZnO
- c) ZnCl₂
- d) none

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13) Which one acts as both oxidising and reducing agent?

- ☒ a) SO_2
- b) O_3
- c) HNO_3
- d) None

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14) Which is correct?

i) It is a four-men committee.

ii) It is a 2-hour journey.

iii) Both

iv) None

point:

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15) Where born?

i) are you

~~ii) Were you~~

iii) Will you

iv) None

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**Never let
you go
down!**

Thank you!