Question No. 10

In the production of which of the following compound, H_2 is used?

CHEMISTRY

a CO_2

b NH_3

c P_4

d SO_2

$N_2 + H_2 \rightarrow NH_3$

SUBSCRIBE

LIVE

Question No. 1

Which of the following is a stable nitrogen halide?

CHEMISTRY

a NF_3

b NCl_3

c NBr_3

d NI_3

N → 2nd period

N — F

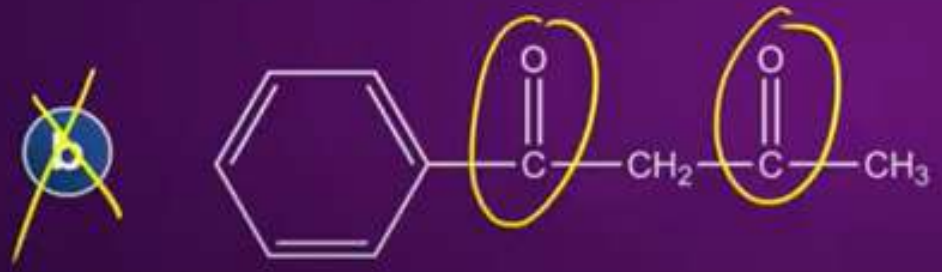
SUBSCRIBE

LIVE

Question No. 2

Which is a conjugated dione?

(2) Ketone



CHEMISTRY

SUBSCRIBE

LIVE

Question No. 4

CHEMISTRY

Which of the following is correct statement?

a. B_2H_6 is Lewis acid

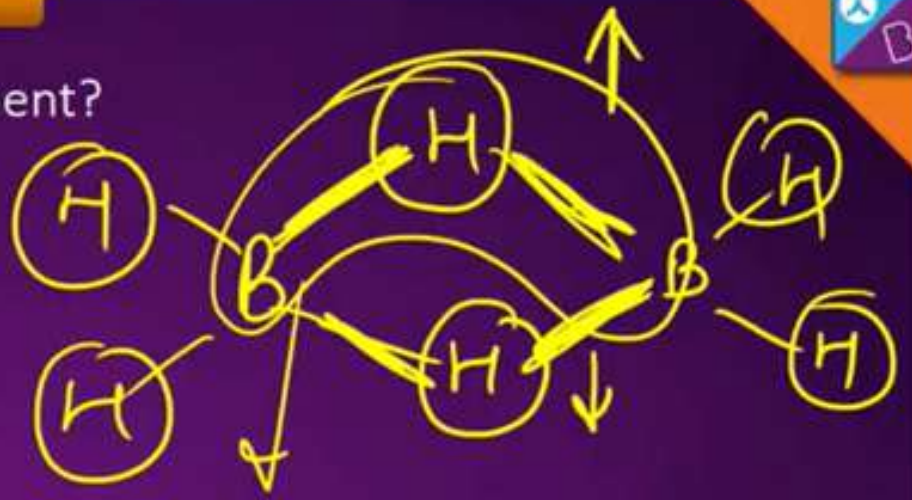
b. All the B-H bonds in B_2H_6 are equal

c. B_2H_6 has planar structure

d. Maximum number of hydrogen in one plane is six

save a

3C-2e

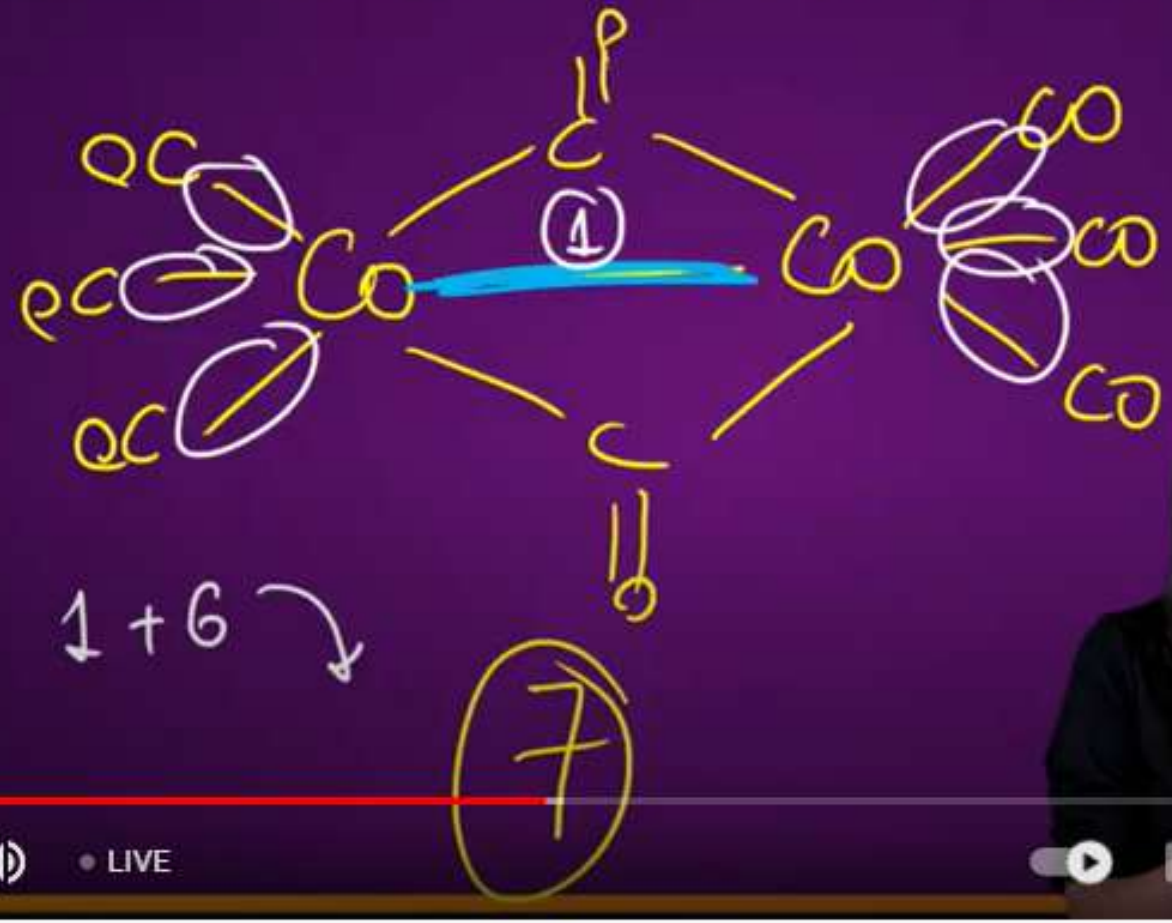


SUBSCRIBE

LIVE

Question No. 21

In the structure of $[Co_2(CO)_8]$, x is the number of Co - Co bonds and y is the number of Co – CO terminal bonds. Then find the value of x + y.



Co – CO terminal bonds

CHEMISTRY

Question No. 2

If sum of square of reciprocal of roots $'\alpha'$ and $'\beta'$ of equation $3x^2 - \lambda x + 1 = 0$ is 15, then find $6(\alpha^3 + \beta^3)^2$.

$3x^2 - \lambda x + 1 = 0 \rightarrow \alpha, \beta$

① $\alpha+\beta = \frac{\lambda}{3}, \quad \alpha\beta = \frac{1}{3}$.

$\frac{1}{\alpha^2} + \frac{1}{\beta^2} = 15 \Rightarrow \frac{\alpha^2+\beta^2}{\alpha^2\beta^2} = 15 \Rightarrow \frac{(\alpha+\beta)^2 - 2\alpha\beta}{(\alpha\beta)^2} = 15$

$\lambda^2 = 21$

② $6(\alpha^3+\beta^3)^2 = 6(\alpha+\beta)^2(\alpha^2+\beta^2-\alpha\beta)^2$

$= 6\left(\frac{\lambda^2}{9}\right)\times\left(\left(\frac{\lambda}{3}\right)^2 - 1\right)^2$

$= 6\times\frac{21}{9}\times\left(\frac{21}{9}-1\right)^2 = 14\times\left(\frac{12}{9}\right)^2$

$= \frac{14\times 16}{9} = \frac{224}{9}$

MATHS

a $\frac{202}{3}$

b $\frac{200}{9}$

c $\frac{224}{9}$

d $\frac{221}{3}$

LIVE

SUBSCRIBE

Question No. 1

Find I_{rms} for the following circuit ?

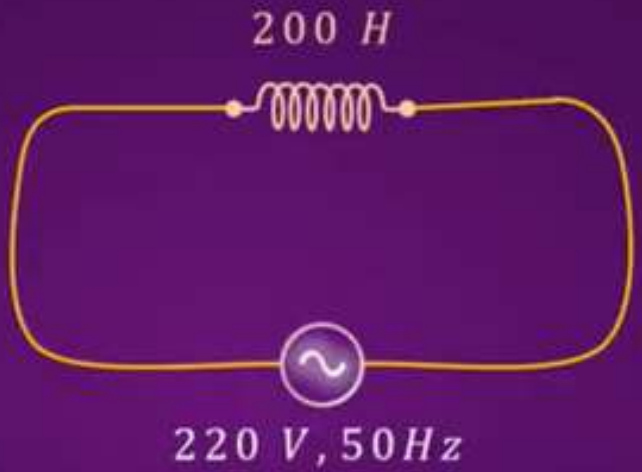
PHYSICS

a $3.5\ mA$

b $35\ mA$

c $350\ mA$

d $3500\ mA$



SUBSCRIBE

LIVE

Question No. 2

A ball is thrown vertically upwards from a tower and reaches the ground in 6 seconds. Another ball is thrown downward at the same position and with the same speed reaches the ground in 1.5 s. Time taken by the ball to reach the ground if dropped from the same height is (Take $g = 10\ m/s^2$)

PHYSICS

a 3 s

b 4 s

c 5 s

d 2 s

LIVE

Question No. 3

For the circuit shown in the figure, if voltmeter reads $1.2\ V$, then find the value of r.

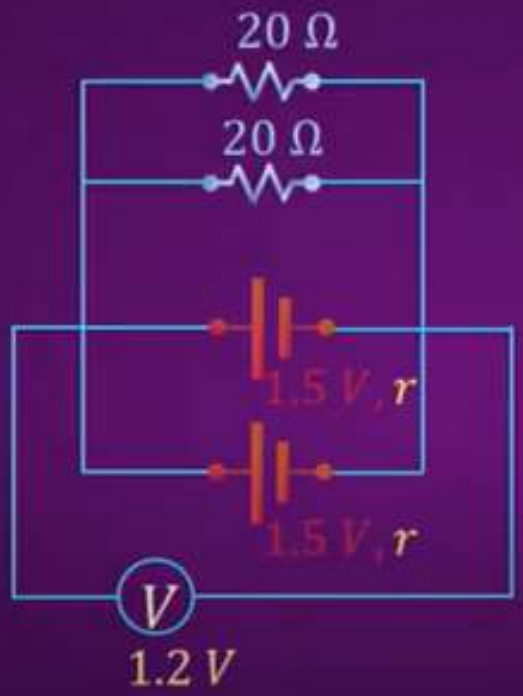
PHYSICS

a $4\ \Omega$

b $5\ \Omega$

c $6\ \Omega$

d $8\ \Omega$



SUBSCRIBE

LIVE

Question No. 4

At height h above the earth surface, weight of the person becomes 1/3, find height?

PHYSICS

a $4.68 \times 10^6\ m$

b $2.68 \times 10^6\ m$

c $3.50 \times 10^6\ m$

d $4.20 \times 10^6\ m$

SUBSCRIBE

LIVE

Question No. 5

MATHS

$< a_i >$ sequence is an A.P. with common difference 1 and $\sum_{i=1}^{n} a_i = 192, \sum_{i=1}^{\frac{n}{2}} a_{2i} = 120,$

then find the value of n, where n is an even integer

$S_n = \frac{n}{2}[a+l]$

$a_1 + a_2 + a_3 + \cdots a_n = 192 \Rightarrow \frac{n}{2}[a_1 + a_n] = 192$

$a_1 + a_n = \frac{384}{n} \rightarrow (1)$

$a_2 + a_4 + a_6 + \cdots + a_n = 120$

$\leftarrow \frac{n}{2}$ terms $\longrightarrow$

$\frac{\frac{n}{2}}{2}[a_2 + a_n] = 120 \Rightarrow \frac{n}{4}[a_1 + 1 + a_n] = 120$

$a_1 + a_n + 1 = \frac{480}{n} \rightarrow (2)$

(2) − (1):

$1 = \frac{480}{n} - \frac{384}{n} = \frac{96}{n}$

$n = 96$

(a) 48

(b) 96

(c) 18

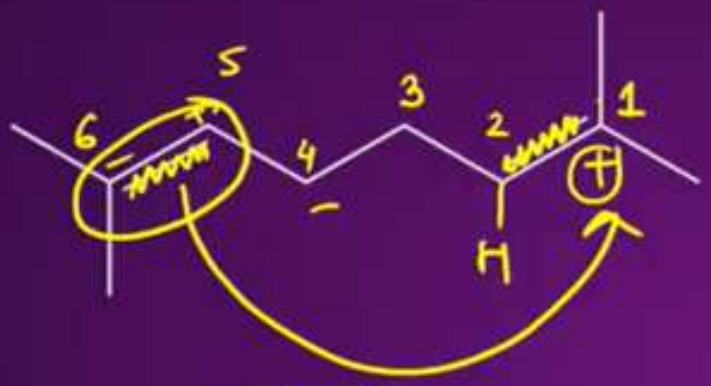
(d) 36

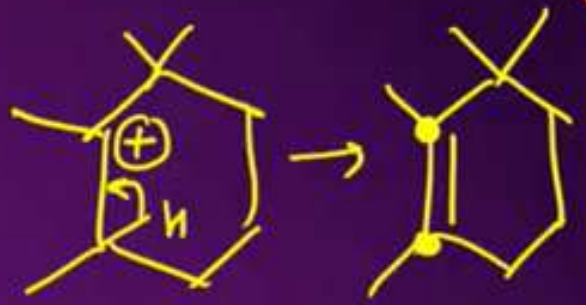
SUBSCRIBE

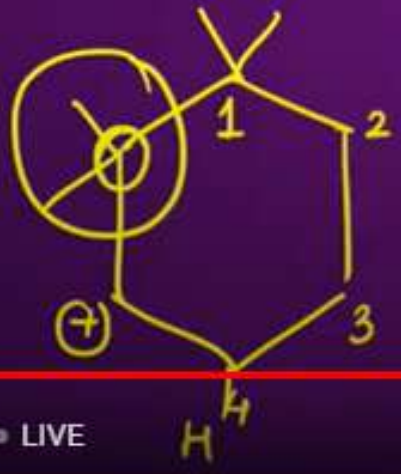
LIVE

Question No. 6

2,7-dimethyl-2,6-octadiene $\xrightarrow[\Delta]{H^+}$ A. Find the number of sp^2 hybridized carbon in the product 'A'?







1,2 methyl shift

CHEMISTRY

SUBSCRIBE

LIVE

Question No. 7

Which of the following is a polyester?

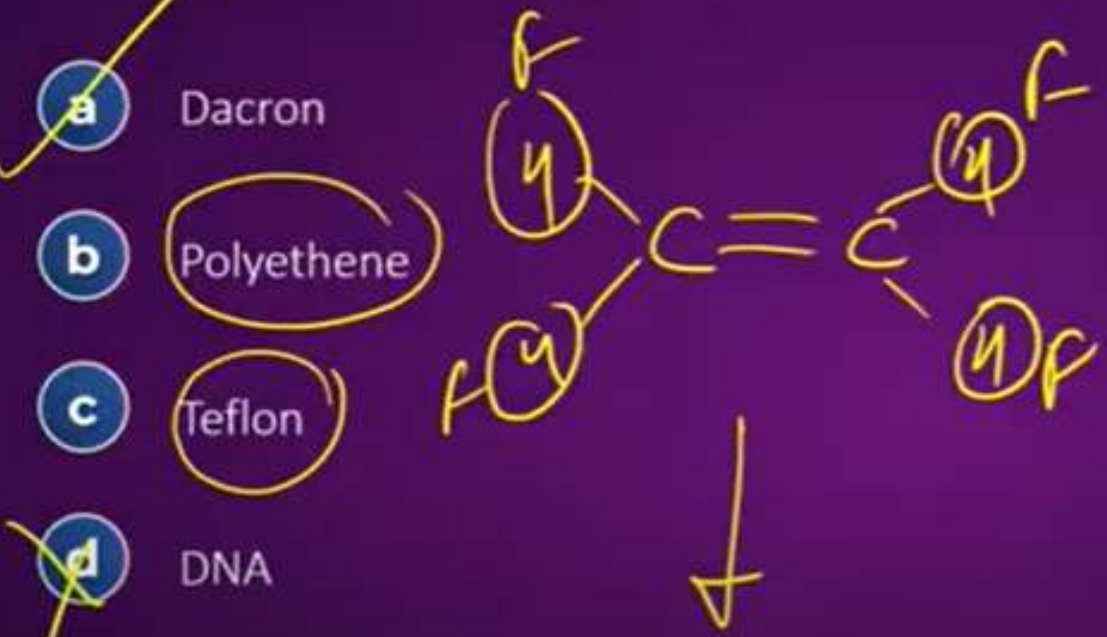
CHEMISTRY

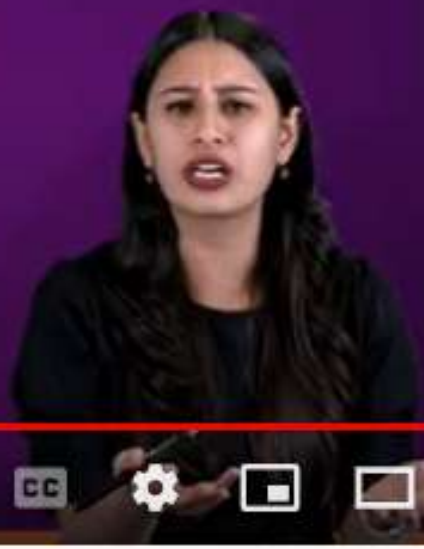
a Dacron

b Polyethene

c Teflon

d DNA





SUBSCRIBE

LIVE

Question No. 8

CHEMISTRY

Find the difference in oxidation number of chromium in chromate and dichromate.

a 4

b 6

c 0

d 2

$2x + (7x-2) = -2$

$Cr_2O_7^{2-}$

$+6$

CrO_4^{2-}

$x + (4x-2) = -2$

$x - 8 = -2 \quad x = +6$

$2x = 12$

$x = +6$

CrO_4^{2-}

$+6$

SUBSCRIBE

LIVE

Question No. 9

Which of the following have the maximum melting point?

CHEMISTRY

a. Acetic acid → 2

b. Formic acid → 1

c. Propanoic acid → 3

d. Butanoic acid → 4

1

Odd

Even

MP↑

less C

interlocking

SUBSCRIBE

LIVE