

HPCL Engineer

**Previous Year Paper
(Instrumentation)
11 Aug 2021**

हिन्दुस्तान पेट्रोलियम कॉर्पोरेशन लिमिटेड

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ne	Bhagalpur Online Centre
	11/08/2021
	2:00 PM - 4:30 PM
	INSTRUMENTATION ENGINEER

anguage

the sentence contains an error?
id you write in your diary that day?

ou write

's name

day?

ur diary

Question ID : 50389010800
Status : Answered
Chosen Option : 2

ost appropriate option to complete the sentence.
___ problems for a while and enjoy ___.

ourself

, ourselves

, yourselves

ourselves

Question ID : 50389010790
Status : Answered
Chosen Option : 4

ost appropriate option to complete the sentence.
ays have faith ___ your parents as they know what is best for you.

e

↩

Most appropriate option to complete the sentence.
He announced that fund-raising was _____ voluntary task.

- completely
- compulsory
- mandatory
- impulsory

Question ID : 50389010791
Status : Marked For Review
Chosen Option : 1

Most appropriate option to complete the sentence.
He quit flying because he _____ to be a pilot before he retired.

- using
- used

He

Question ID : 50389010789
Status : Answered
Chosen Option : 4

Most appropriate antonym of-

- incompatible
- comptional
- coment

Question ID : 50389010794
Status : Answered
Chosen Option : 1

Most misspelt word.

- knowledge
- maint
- marium
- maire

Question ID : 50389010797
Status : Answered
Chosen Option : 2

entence which is grammatically correct.

- me that pot soup of hot
- me that hot of pot soup
- me hot that pot of soup
- me that pot of hot soup

Question ID : 50389010801
Status : Answered
Chosen Option : 4

ction can be used for this sentence?
erous interviews, _____ none of the companies offered you a job.

- ss
- ough

Question ID : 50389010787
Status : Answered
Chosen Option : 4

st appropriate option to complete the sentence.
are even _____ than this.

- ler
- st
- se

Question ID : 50389010788
Status : Answered
Chosen Option : 2

orrect preposition.
ething strange and exciting _____ this man.

- ss
- it

Question ID : 50389010785
Status : Answered
Chosen Option : 4

word which can be used in place of the words underlined.
He sent her a poem which was written by an unknown author.

- notorious
- anonymous
- anonymous
- unanimous

Question ID : 50389010795
Status : Answered
Chosen Option : 3

Which of the following contains an error?
The minutes past 10 in my watch.

- minutes
- 10
- only
- of watch

Question ID : 50389010799
Status : Answered
Chosen Option : 3

Which of the following is an appropriate synonym of-

- stagnant
- stagnant
- stagnant
- stagnant

Question ID : 50389010793
Status : Answered
Chosen Option : 2

Which of the following is a misspelt word.

- abundant
- abundant
- abundant
- abundant

Question ID : 50389010796
Status : Marked For Review
Chosen Option : 4

appropriate word to complete the phrase.
ice in my 12th Board exams was a let-____ for my parents.

1

Question ID : 50389010798
Status : Answered
Chosen Option : 3

: appropriate synonym of-

gerate
ct
ect
r

Question ID : 50389010792
Status : Answered
Chosen Option : 2

ve Aptitude

has been developed around a circular park. Inner and outer circumferences of the path are 330 m and
ly. Find the width of the path (in m).

Question ID : 50389010829
Status : Answered
Chosen Option : 3

efficient than B and can complete a work in 5 days. In how many days will B
same work?

1



M exceeds 40% of $\frac{M}{2}$ by 300. Find M.

Question ID : 50389010812
Status : Answered
Chosen Option : 3

the following expression.

$(3) \div 2.05 + 2.05$

5
1
0.5
1.5

Question ID : 50389010806
Status : Answered
Chosen Option : 3

score of some students in an examination is 156. The ratio of the number of girls is 15:6. The average score of girls is 25% less than that of the boys. What is the score of the girls in the class?

5
2
8

Question ID : 50389010823
Status : Answered
Chosen Option : 3

of Rice are available in the market at Rs. 45 per kg and Rs. 52 per kg. In what ratio should these be mixed to have the cost Rs. 49 per kg?

Question ID : 50389010800

verage of 4 smallest prime numbers and 7 smallest odd natural numbers?

Question ID : 50389010822
Status : **Marked For Review**
Chosen Option : 2

the following.

$\overline{6} + 0.0\overline{26}$

$\overline{5}$

Question ID : 50389010803
Status : **Answered**
Chosen Option : 3

interest on a certain sum of money at 5% per annum for 3 years is Rs. 1891.50,
simple interest (in Rs.) on the same sum for the same period at the same rate.

)
)
)
)

Question ID : 50389010826
Status : **Answered**
Chosen Option : 4

ree numbers is 245. Second number is 4 times the first number and the third
less than 5 times the first number. What is the greatest number?

the following expression.

$\sqrt[3]{16^2 \sqrt{32^{16}}}$

-
-
-

Question ID : 50389010805
Status : Answered
Chosen Option : 4

polynomials $(x + 2)(3x^2 - 2ax + 3)$ and $(2x - 1)(5x^2 - 3x + 2b)$ is $(x + 2)(2x - 1)$, then find the

Question ID : 50389010834
Status : Answered
Chosen Option : 3

smallest natural number must be added to 16632 to make it a perfect square?

Question ID : 50389010802
Status : Answered
Chosen Option : 3

radius of a cylinder is 14 cm. If curved surface area of the cylinder is three-fifth of the total surface area, then
volume (in cu. cm) of the cylinder? (Use $\pi = \frac{22}{7}$)

- 10
- 16
- 18
- 24

Question ID : 50389010828

ing the side of a square by 4 cm, its area increases by 112 sq. cm, then what is the side of the original

Question ID : 50389010827
Status : Answered
Chosen Option : 1

of a right angled triangle is 1 cm more than 4 times the shortest side. If third
ess than 4 times the shortest side, then what will be the length of the
n cm)?

Question ID : 50389010833
Status : Answered
Chosen Option : 3

ney on compound interest amounts to Rs. 50000 after 2 years and to Rs. 78125
What is the sum (in Rs.)?

- 10
- 10
- 10
- 10

Question ID : 50389010825
Status : Answered
Chosen Option : 3

e sum of the reciprocals of

$\frac{3}{5}, 1\frac{1}{5}, 4\frac{2}{7}, 9$ from 5.

- $\frac{1}{5}$
- $\frac{11}{45}$
- $\frac{2}{5}$

what is the value of k in the following expression?

$$\frac{0.3}{k} = \frac{0.25 \times k}{0.9 \times 0.03 \times 13}$$

- 6
- 44
- 2
- 4

Question ID : 50389010807
Status : Answered
Chosen Option : 2

price of an item is 25% less than the marked price. At how much percentage above marked price has the item been marked?

- 1
- 3

Question ID : 50389010820
Status : Answered
Chosen Option : 4

He bought an article with 20% profit. If he had bought the article at 10% less and sold at the same price, what would have been his profit percentage?

Question ID : 50389010821
Status : Answered
Chosen Option : 4

A train moving at a speed of 90 km/h passes an electric pole in 15 seconds. Find the time (in seconds) to cross a bridge of length 800 m.

Three numbers. The second number is less than the first number and 20% more than the first number. If the first number is k% of the third number, then find the value of k.

$$0\frac{1}{2} \\ 5 \\ - \\ 9$$

Question ID : 50389010813
Status : Answered
Chosen Option : 3

A man can row a boat in still water at a speed of 10 km/h. If he rows downstream, then the speed of the boat in still water is three-fourth of the time taken to row the same distance upstream. If speed of the current is 2 km/h, then find the speed of the boat in still water (in km/h).

Question ID : 50389010814
Status : Answered
Chosen Option : 3

A 2-digit number is such that the sum of the digits is 7. If the number obtained by interchanging the digits is 7 times the original number, then what is the sum of the digits of the original number?

Question ID : 50389010832
Status : Answered
Chosen Option : 1

The average of 24 numbers is 36. The average of 15 of these numbers is 33 and that of the remaining 9 numbers is 37. What is the average of the remaining three numbers?

Question ID : 50389010824

o a work in 12 and 20 days respectively. They work together for 5 days and k. Then C took up the work and finished the remaining work in 3 days. In how n C complete the whole work?

Question ID : 50389010819
Status : Answered
Chosen Option : 1

aces of length 1.5 m can be cut from a roll of 45 m ribbon?

Question ID : 50389010811
Status : Answered
Chosen Option : 2

umbers is 81. Their LCM is 20 times their HCF. If their HCF is 9, then what is mber?

Question ID : 50389010804
Status : Answered
Chosen Option : 4

:C = 4:5, C:D = 3:4 and A + D = 49, then find B.

Question ID : 50389010810
Status : Answered
Chosen Option : 3

km downstream and 30 km upstream in 6 hours. He can also row 35 km and 45 km upstream in 7 hours. How much time will he take to row 32 km and 35 km upstream if speed of the boat in still water as well as the speed of r both increase by 1 km/h each?

- 0 m
- 5 m
- 8 m
- 0 m

Question ID : 50389010816
Status : Answered
Chosen Option : 3

and B can fill a tank in 2 hours and 3 hours respectively. Both the pipes are her but after 30 minutes, pipe A is turned off. What is the total time required to

- 0 m
- .5 m
- .5 m
- 5 m

Question ID : 50389010818
Status : Answered
Chosen Option : 4

le shows the earning (in Rs 1000) of 5 persons A, B, C, D and E over the earned maximum over the 5 years?

March	April	May	June	July
24.2	25.5	25.8	26	26.5
23.5	24.2	25.5	27	26.8
25.5	24.8	26.5	24	28.2
24.3	24.7	25.2	27	28.8
25	26.9	27.6	27.5	26.2

d E

Question ID : 50389010835
Status : Answered
Chosen Option : 3

If diagonals of a Rhombus are 8 cm and 15 cm. Find the distance between any sides of the rhombus (in cm).

$\frac{1}{7}$

$\frac{1}{2}$

?

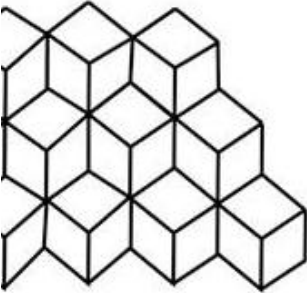
Question ID : 50389010830

Status : Answered

Chosen Option : 4

Potential Test

shown in the question figure is arranged using cubes only. What is the total cubes in the 3-D figure given below?



Question ID : 50389010864

Status : Answered

Chosen Option : 4

tion that is related to the third term in the same way as the second term is first term.
?

Question ID : 50389010837

Status : Answered

Sandeep are brothers. Veena is Nandlal's only daughter, Sayli's mother. e, Juhi, is Veena's only daughter-in-law. How is Sayli related to Sandeep?

- if
- ghter
- er-in-law
- er

Question ID : 50389010850
Status : Answered
Chosen Option : 2

tion that is related to the third term in the same way as the second term is first term.
nent : Governor : : Union Government : ?

- e Minister
- icellor
- ident
- iker

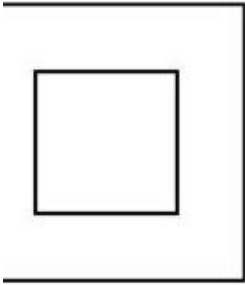
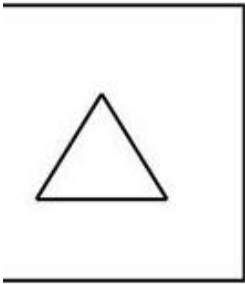
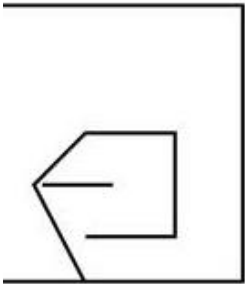
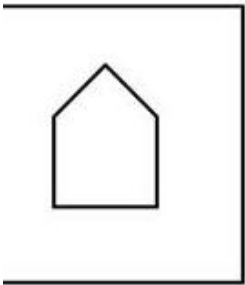
Question ID : 50389010839
Status : Answered
Chosen Option : 2

tion that is related to the third term in the same way as the second term is first term.
16 : ?

Question ID : 50389010840
Status : Answered
Chosen Option : 2

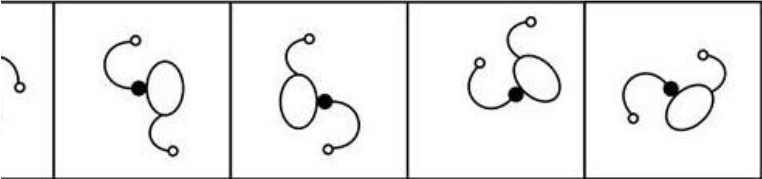
tion that will replace the question mark and complete the series correctly.

-	<	□	?
---	---	---	---



Question ID : 50389010867
Status : Answered
Chosen Option : 4

the four figures — A, B, C and D are different from the question figure Q.
tion that has a figure similar to figure Q.



A B C D

Question ID : 50389010869
Status : Answered
Chosen Option : 3

nber that will come next in the number series.
, 35, ?

Question ID : 50389010856
Status : Answered
Chosen Option : 3

ifference between the greatest and smallest 3-digit prime numbers?

Question ID : 50389010860
Status : Answered
Chosen Option : 2

s the only daughter-in-law of G. G's husband R has two children, V and W. How
, K?

dfather
er

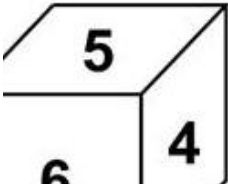
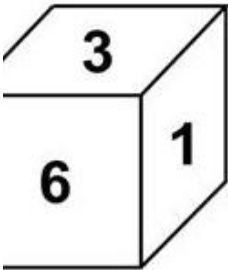
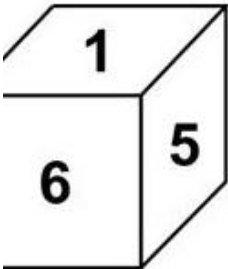
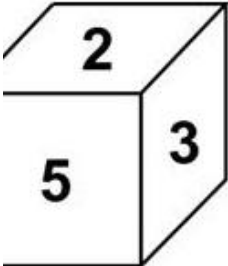
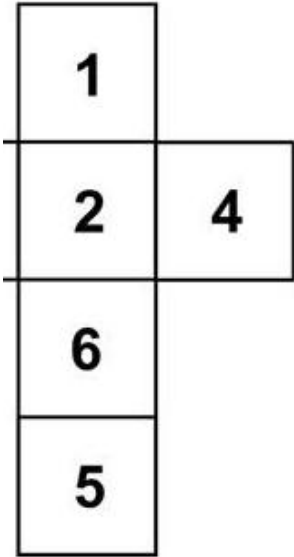
nber that will come next in the number series.
, 91, ?

Question ID : 50389010857
Status : Answered
Chosen Option : 2

nber that will come next in the number series.

Question ID : 50389010854
Status : Answered
Chosen Option : 4

age that will be formed after the unfolded net of the cube is folded inwards to



books were to be distributed among a certain number of students invited on the function. However, 9 more students joined the function at the last moment. 100 ebooks were distributed equally among all the students, each one of them received 20 ebooks more than originally planned. How many students were originally invited to the function?

Question ID : 50389010858
Status : Answered
Chosen Option : 3

Find a word that is similar to the key word given below:

je

Question ID : 50389010847
Status : Answered
Chosen Option : 2

Find a word that is related to the third term in the same way as the second term is related to the first term.
Mouse : Wheel :: Bird : ?

;

)

Question ID : 50389010836
Status : Answered
Chosen Option : 4

Find a word that is similar to the pair given below:

Tea : Jug

Water : Mug

Soup : Bowl

Cup

language, horse is called cow; cow is called deer; deer is called fox; and fox is called hen, from which one of the following can milk be definitely obtained?

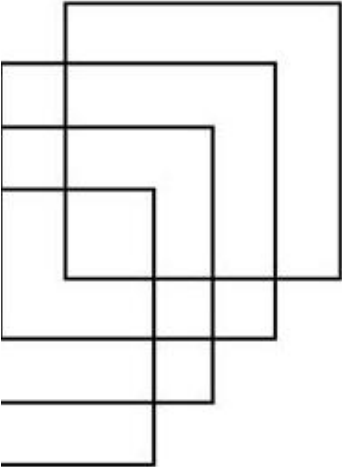
e

Question ID : 50389010845

Status : Answered

Chosen Option : 2

Maximum number of squares in this image?



Question ID : 50389010866

Status : Answered

Chosen Option : 3

In a certain code language, DEN is coded as EDO; BAT is coded as CZU; and BUN is coded as CTO. How would MOP be coded in that language?

!

Question ID : 50389010843

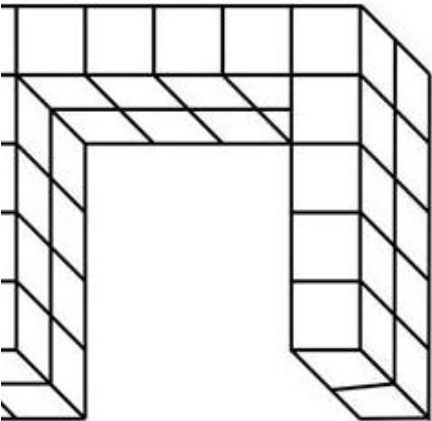
Status : Answered

Chosen Option : 3

number that will come next in the number series.
63, ?

Question ID : 50389010855
Status : Answered
Chosen Option : 3

total number of cubical blocks in the 3-D figure given below?



Question ID : 50389010862
Status : Answered
Chosen Option : 2

tion that is similar to the key word given below:

- e
- oceros
- alo

Question ID : 50389010846
Status : Answered
Chosen Option : 1

he following four options share a similarity. Select the option that is different
rs.

|

t

Question ID : 50389010841
Status : Answered
Chosen Option : 3

ge, COAL is coded as 3S@7; PEEL is coded as 9##7; and PEAK is coded as 9#@%. Then, how would
in that language?

#0%

#3

3%

@%

Question ID : 50389010844
Status : Answered
Chosen Option : 3

tion that is related to the third term in the same way as the second term is
first term.

Question ID : 50389010838
Status : Answered
Chosen Option : 1

ion that will replace the question mark and complete the series correctly.

* \$	#○ \$*	\$# *○	?
--------------------------------------	--	--	--------------

\$○

△*

*\$

○#

○\$

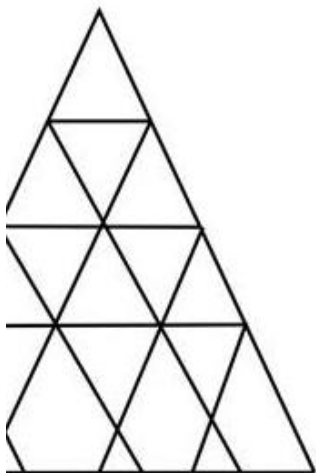
#*

○\$

#△

Question ID : 50389010868
Status : Answered
Chosen Option : 2

Maximum number of triangles in this image?



Question ID : 50389010865
Status : Answered
Chosen Option : 3

He bought a suit piece for Rs. x , and sold it at a profit of 20%. What is the value of x , if he sold it for Rs. 720?

- 00
- 30
- 40
- 50

Question ID : 50389010859
Status : Answered
Chosen Option : 1

If the sum of two prime numbers is 323, and their difference is 2. Which one of the following is the smaller of these two prime numbers?

Question ID : 50389010861
Status : Answered
Chosen Option : 2

picture of a boy, Ramya said, "He is my father-in-law's only son's only sister's only brother. Who is Ramya's mother related to the boy in the picture?

Paternal Aunt

Paternal/maternal) Great grandmother

Paternal Aunt

Paternal Grandmother

Question ID : 50389010853

Status : Answered

Chosen Option : 3

Madhavan's only daughter. Madhavan is Saritha's mother, Parvathy's only son. Parvathy's daughter, Vedika related to Saritha?

Sister

Daughter

Granddaughter

Question ID : 50389010852

Status : Answered

Chosen Option : 1

Which of the following is a pair that is similar to the pair given below:
Insects : Bees

Animals : Fish

Religion : Christianity

Air : Wind

Question ID : 50389010848

Status : Answered

Chosen Option : 2

The following four options share a similarity. Select the option that is different from the others.

4, 68, 136

8, 64, 256

4, 48, 96

10, 60, 120

Question ID : 50389010842

Status : Answered

Chosen Option : 2

stem equation , the system is _____but _____.

- variant, non-causal
- invariant, non-causal
- variant, causal
- invariant, causal

Question ID : 50389010887
Status : Answered
Chosen Option : 1

nitter amplifier is connected with 3-RC network in positive feedback to
oscillator, what are the phase contributions from the transistor and each RC

- 90°
- 0°
- 60°
- 60°

Question ID : 50389010909
Status : Answered
Chosen Option : 3

circuit consists of two resistors of 100Ω and 200Ω in series with a 30V dc.
current through 100Ω and voltage drop across 200Ω.

- 20V
- 10V
- 20V
- 10V

Question ID : 50389010872
Status : Answered
Chosen Option : 1

s mechanical displacement into electrical signals.

-
- nometer
- mometer
- n gauge

Question ID : 50389010936
Status : Answered
Chosen Option : 1

secondary winding of a current transformer is connected in _____ with the line carrying the current and the secondary winding is directly connected across _____.

Primary, ammeter

Primary, voltmeter

Secondary, ammeter

Secondary, voltmeter

Question ID : 50389010932
Status : Answered
Chosen Option : 1

In an LTI system the impulse response is $h(n) = \{1, 2, 1, 3\}$. What will be the difference equation?

$y(n) = x(n) - 2x(n-1) - y(n-2) - 3y(n-3)$

$y(n) = x(n) + 2x(n-1) + x(n-2) + 3x(n-3)$

$y(n) = x(n) - 2x(n-1) - x(n-2) - 3x(n-3)$

$y(n) = x(n) + 2y(n-1) + y(n-2) + 3y(n-3)$

Question ID : 50389010882
Status : Answered
Chosen Option : 2

Accuracy of the reference measures _____.

Precision

Range

Trueness

Stability

Question ID : 50389010927
Status : Answered
Chosen Option : 3

A milliammeter with internal resistance $0.1\text{K}\Omega$, is required to measure 10mA . Compute the sensitivity if the shunt resistance is 11.11Ω .

1A

1mA

10A

Question ID : 50389010924
Status : Answered
Chosen Option : 4

Contribute to _____ power in electrical circuits.

Inductive

Capacitive

Constructive

Destructive

Question ID : 50389010877
Status : Answered
Chosen Option : 2

A Zener diode is fabricated using _____ semiconductor and can be used as a

Unidirectional switch

Unidirectional switch

Bidirectional switch

Bidirectional switch

Question ID : 50389010911
Status : Answered
Chosen Option : 1

A modulated wave can be generated from frequency modulator by connecting a _____ before the modulator and a frequency modulated wave can be generated from a frequency modulator by connecting a _____ before the modulator.

Integrator, integrator

Integrator, high-pass filter

Integrator, low-pass filter

Integrator, differentiator

Question ID : 50389010950
Status : Answered
Chosen Option : 1

How many lines are required to select _____ memory locations.

2048

24

2

Question ID : 50389010918
Status : Answered
Chosen Option : 1

nal logic circuit for traffic control is designed. _____ GATE can only be ment the designed control circuit without any additional GATES.

2

D

Question ID : 50389010914
Status : Answered
Chosen Option : 4

tion common emitter transistor is operating in saturation mode, identify the ment.

s zero

is zero

zero

= Vce

Question ID : 50389010902
Status : Answered
Chosen Option : 3

power meter, for all _____ power factors between 0-0.5, one meter shows ig and second wattmeter shows _____ negative reading.

ng, positive, positive

ng, positive, negative

ng, negative, negative

ng, positive, negative

Question ID : 50389010929
Status : Answered
Chosen Option : 4

put voltage and output current in common base configuration of a transistor?

IE respectively

IC respectively

IE respectively

IC respectively

Question ID : 50389010904
Status : Answered
Chosen Option : 4

a difference voltage is produced _____ to electric current in the conductor,
lied _____ field perpendicular to the current.

- llei, electric
- verse, electric
- llei, magnetic
- verse, magnetic

Question ID : 50389010939
Status : Answered
Chosen Option : 3

average transmitted power of frequency modulated wave with carrier signal
t).

Question ID : 50389010944
Status : Answered
Chosen Option : 2

quence x(n)={1,4,1,4}, the FFT of the sequence will be _____

- inary and odd
- inary and even
- and odd
- and even

Question ID : 50389010888
Status : Answered
Chosen Option : 1

eceiver, the PIN diode has a _____ intrinsic semiconductor layer separating
ns, and the diode is _____ biased which helps draw the current carriers away
insic region.

- t, reverse
- , reverse
- , forward
- t, forward

Question ID : 50389010952
Status : Answered
Chosen Option : 3

place transform of $e^{-4t} \cos(6t)u(t)$ is

$$\frac{(s - 4)}{(s - 4)^2 + 36)}$$

$$\frac{(s + 6)}{(s + 6)^2 + 16)}$$

$$\frac{(s + 4)}{(s + 4)^2 + 16)}$$

$$\frac{(s + 4)}{(s + 4)^2 + 36)}$$

Question ID : 50389010890

Status : Answered

Chosen Option : 4

damping factor of a unity feedback system with open loop gain $1/s(s+3)$.

Question ID : 50389010895

Status : Answered

Chosen Option : 1

eliminates errors due to contacts and _____ in bridge measuring

atstone Bridge, lead capacitances

n's Double bridge, lead resistances

atstone bridge, lead inductances

atstone Bridge, lead resistances

Question ID : 50389010933

Status : Answered

Chosen Option : 2

stem equation $y(n+2) = -3x(n+2) + 2x(n) - 5x(n-1)$, the system is ____ and
ctively.

causal, IIR

al, IIR

causal, FIR

in pulse modulation scheme resulting in _____, is corrected by _____.

ture effect, equalizer

ing, low noise amplifier

lature null effect, equalizer

ture effect, low noise amplifier

Question ID : 50389010946
Status : Answered
Chosen Option : 2

be applied to circuits containing ____.

osition theorem, Inductors with initial conditions

osition theorem, resistors

kley's equation, transistors

osition theorem, ideal capacitors

Question ID : 50389010873
Status : Answered
Chosen Option : 2

op transfer function of a negative feedback system is 10 and feedback factor will be the open loop gain?

,

Question ID : 50389010892
Status : Answered
Chosen Option : 2

munication, compute the total energy if the energy of each photon is 1 J and 0 photons.

|

1

Question ID : 50389010953
Status : Answered
Chosen Option : 2

1 impulse response is essentially a _____ compensator and used as a ____

- pral, Comb
- l, high-pass
- low-pass
- ortional, all pass

Question ID : 50389010893
Status : Marked For Review
Chosen Option : 1

peak value of a full wave rectified output if its average value is found to be

Question ID : 50389010876
Status : Answered
Chosen Option : 1

$f(X,Y,Z) = \sum m(2,3,4,5)$ is implemented using SOP form, the resultant action would be _____.

)Z

Question ID : 50389010916
Status : Marked For Review
Chosen Option : 3

ounter can be implemented using three flipflops.

- 6
- 11
- 9
- 13

Question ID : 50389010920
Status : Answered
Chosen Option : 1

is the even part of the signal $x(t) = 2 + \cos t$?

☐ $\sin t$

☐ $\cos t$

☐ $-\sin t$

☐ $\cos t$

Question ID : 50389010880

Status : Answered

Chosen Option : 4

For an n-channel E-MOSFET $V_{th} = 5V$, what is the condition to turn ON the device?

☐ $>5V$

☐ $<5V$

☐ $>5V$

☐ $=5V$

Question ID : 50389010903

Status : Answered

Chosen Option : 1

The gauge factor if change in resistance is 0.2Ω per Ohm and change in length is

1.

Question ID : 50389010938

Status : Answered

Chosen Option : 1

A discrete-time system with the transfer function $H(z) = 1 + 2z^{-1}$ is excited with

$x(n) = \{3, 4\}$, compute the output of the system.

☐ $\{4, 11, 6\}$

☐ $\{3, 10, 8\}$

☐ $\{3, 8, 10\}$

☐ $\{4, 6, 11\}$

Question ID : 50389010889

Status : Answered

ulation schemes, raised cosine filter is used to reduce _____ caused by

- symbol interference, higher bandwidth
- symbol interference, timing error
- symbol interference, higher bandwidth
- symbol interference, timing error

Question ID : 50389010947
Status : Answered
Chosen Option : 3

eedback system if the open loop gain is -100 and the feedback factor 1/10, closed loop gain.

1

1

1

Question ID : 50389010891
Status : Answered
Chosen Option : 1

unction transistor in common emitter mode, IC = maximum and VC (collector (emitter voltage), the transistor operates in ____ mode.

ration

ard blocking

e

iff

Question ID : 50389010906
Status : Answered
Chosen Option : 4

p, J and K inputs are set to logic 1, the output Q(0) will be _____ when Q(-1) is

efined, 1

Question ID : 50389010917
Status : Answered
Chosen Option : 1

al $x(t) = 5 \cos\left(\frac{2\pi t}{3}\right) + 9 \sin(0.5\pi t) + 3 \sin\left(\frac{\pi t}{3} - \frac{\pi}{6}\right) + 12$. Identify the valid statement for x(t).

- s periodic with frequency (1/12) Hz
- s periodic with period 1.2s
- s not periodic
- s periodic with frequency 12Hz

Question ID : 50389010879
Status : Answered
Chosen Option : 1

CRO, which horizontal voltage moves the luminous spot from left to right in a
ier?

- nally generated ramp voltage
- nally generated step voltage
- nally generated step voltage
- nally generated ramp voltage

Question ID : 50389010925
Status : Answered
Chosen Option : 4

100V on a digital multimeter ranges from 97V to 103V. Compute the accuracy.

- .3%
- %
- .5%
- %

Question ID : 50389010928
Status : Answered
Chosen Option : 4

circuit provides effective impedance of $-2j\Omega$. What will be the phase difference
age and current in this circuit? -

Question ID : 50389010878
Status : Answered
Chosen Option : 2

ed full wave rectifier is loaded by an inductor in series and capacitor in
active part of this arrangement behaves as _____.

- ector
- .
- lator
- fier

Question ID : 50389010907
Status : Answered
Chosen Option : 4

ells if the transmission rate is less than channel capacity, then there exists
hat permit error free transmission.

- mon's, backward error-correcting codes
- ist criterion, forward error-correcting codes
- mon's theory, forward error-correcting codes
- ist criterion, backward error-correcting codes

Question ID : 50389010948
Status : Answered
Chosen Option : 3

following in context of thermistors and identify the correct choice.
's are inexpensive and rugged.
's are not amenable to remote measurements

- d Q both are incorrect
- orrect, Q is incorrect
- nincorrect, Q is correct
- d Q both are correct

Question ID : 50389010943
Status : Answered
Chosen Option : 4

following in context of permanent magnet moving coil and identify the correct

ensitive to small current.
ree from hysteresis and not affected by external fields.

- nincorrect and Q is correct
- d Q both are incorrect
- d Q both are correct
- orrect and Q is incorrect

Question ID : 50389010930
Status : Answered

transfer function if the impulse response of an LTI systems is $h(n) = 0.5^n u(n)$.

$$(z) = \frac{z}{(z - 0.5)}; |z| < 0.5$$

$$(z) = \frac{1}{(z - 0.5)}; |z| > 0.5$$

$$(z) = \frac{1}{(z - 0.5)}; |z| < 0.5$$

$$(z) = \frac{z}{(z - 0.5)}; |z| > 0.5$$

Question ID : 50389010884

Status : Answered

Chosen Option : 1

order of transfer function of an ideal LC tank circuit is _____.

Question ID : 50389010894

Status : Answered

Chosen Option : 3

following in context of creeping in energy meter and identify the correct

any reason of creeping is under-compensation for friction.
may be because of excessive voltage and vibrations.

both Q both are correct

correct, Q is incorrect.

incorrect, Q is correct

both Q both are incorrect

Question ID : 50389010941

Status : Answered

Chosen Option : 3

is given by $v(t) = 5\sin(2000\pi t)$, what is the time period and the dc
v(t)?

ms, 0V

0V

ms, 5V

system bandwidth capacity in a FDM system having 200 users with individual

- 1MHz
- 1/Hz
- 1/Hz
- 5MHz

Question ID : 50389010949
Status : Answered
Chosen Option : 3

nder influence of external force produce ____.

- nometers, vibrations
- electric crystals, magnetomotive force
- nistors, current
- electric crystals, electromotive force

Question ID : 50389010937
Status : Answered
Chosen Option : 1

JSFET stands for _____ layer which provides _____ to the device.

- e, high input impedance
- r, higher base transportation factor
- hermal, thermal statibility
- e, low input impedance

Question ID : 50389010905
Status : Answered
Chosen Option : 1

ometer is a _____ instrument where magnetic field in which coil moves, is
vo ____.

- ifer-type, permanent magnets
- tant-type, permanent magnets
- ifer-type, fixed coils
- tant-type, fixed coils

Question ID : 50389010931
Status : Answered
Chosen Option : 3

stem transfer function is $H(s)=1/s^3$. Express its impulse response in terms signal

- $f) \otimes u(t); \quad \otimes$ denotes convolution
- $f) \otimes u(t) \otimes u(t) \otimes u(t); \quad \otimes$ denotes convolution
- $f) \times u(t) \times u(t); \quad \times$ denotes multiplication
- $f) \otimes u(t) \otimes u(t); \quad \otimes$ denotes convolution

Question ID : 50389010896
Status : Answered
Chosen Option : 4

of control lines in a multiplexer is 5, identify the MUX.

Question ID : 50389010915
Status : Answered
Chosen Option : 3

nsmitter transmits 10W power, compute its equivalent power in dBm.

- 3m
- 8m
- 3m
- 3m

Question ID : 50389010954
Status : Answered
Chosen Option : 1

measured by ____.

- nistor
- nometer
- n gauge
-

Question ID : 50389010935
Status : Answered
Chosen Option : 2

odes, the junction capacitance is controlled by _____ supply in _____ mode.

- nal, forward biased
- nal, reverse biased
- nal, forward biased
- nal, reverse biased

Question ID : 50389010910
Status : Answered
Chosen Option : 2

er system has natural frequency 3rad/sec and unity damping factor. Identify its ion.

$$\frac{1}{s^2 + 3s + 9}$$
$$\frac{9}{s^2 + 2s + 9}$$
$$\frac{9}{s^2 + 6s + 9}$$
$$\frac{3}{s^2 + 3s + 3}$$

Question ID : 50389010899
Status : Answered
Chosen Option : 3

system, the transfer function is $H(z) = \frac{z}{(z - 0.2)(z - 0.5)}$; $|z| > 0.5$, the _____ and _____.

- al IIR, unstable
- al FIR, stable
- ausal FIR, stable
- al IIR, stable

Question ID : 50389010885
Status : Answered
Chosen Option : 1

Instruction is executed in 8085,
Correct statement.
BH is copied to register B
at address 4002H is copied to register B
BH is copied to register B
at address 4000H is copied to register B

Question ID : 50389010923
Status : Answered
Chosen Option : 4

_____ interrupt which has the _____ priority among all other
maskable, lowest
maskable, highest
maskable, second lowest
maskable, second highest

Question ID : 50389010922
Status : Answered
Chosen Option : 2

Function of a system is $1/(s+1)$, compute steady state final value when excited input.
Steady state value is 1

Question ID : 50389010898
Status : Answered
Chosen Option : 2

In a parallel circuit, two resistors of 10Ω and 15Ω are connected in parallel across 60V dc. Calculate the current through 10Ω resistor.

Question ID : 50389010871
Status : Answered
Chosen Option : 2

stem, sustained oscillations are obtained as output, what are the pole

- gate poles on imaginary axis
- gate poles in the left half of s-plane
- poles in the left half of s-plane
- gate poles in the right half of s-plane

Question ID : 50389010897
Status : Answered
Chosen Option : 1

following numbers in sequence 0, 1, 2, 3, 10, 11, 12, 13, 20,
umber system for the above sequence.

- mal
- I
- decimal
- ernary

Question ID : 50389010912
Status : Answered
Chosen Option : 4

operating gate-to-source voltage for an n-channel FET to make drain current
= -3.5V.

/

Question ID : 50389010908
Status : Answered
Chosen Option : 2

er system has only imaginary conjugate poles, what is the damping factor
system?

- een zero and 1
- than zero
- ter than unity

Question ID : 50389010900
Status : Answered
Chosen Option : 3

an simplified form for $S = (X + Y)(X + Z)$ is _____.

2

2

Question ID : 50389010921
Status : Answered
Chosen Option : 4

ten the core is at NULL position, the flux linkage with both the secondary _____ and results in _____ output voltage.

il, zero

qual, zero

il, maximum

qual, maximum

Question ID : 50389010942
Status : Answered
Chosen Option : 3

e integrating type DVM, the accuracy of measured voltage _____ on the _____
ne constant and _____ of frequency of oscillation.

ends, independent

in't depend, function

in't depend, independent

ends, function

Question ID : 50389010926
Status : Answered
Chosen Option : 3

following in context of linear variable differential transformer and identify the _____
a. _____
umes low power and has lower hysteresis loss.
ic response of LVDT is instantaneous.

d Q both are correct

orrect, Q is incorrect

ncorrect, Q is correct

d Q both are incorrect

Question ID : 50389010934
Status : Answered
Chosen Option : 4

nent errors in current transformer can be reduced by _____ the flux
 _____ permeability of core material.

- ☐ easing, increasing
- ☐ easing, increasing
- ☐ easing, decreasing
- ☐ easing, decreasing

Question ID : 50389010940
 Status : Answered
 Chosen Option : 2

wer output power, _____ switching speed and _____ spectral width than the
 optical source.

- ☐ er, higher
- ☐ r, higher
- ☐ r, lower
- ☐ er, lower

Question ID : 50389010951
 Status : Answered
 Chosen Option : 2

the open loop DC gain if the closed loop transfer function is
 _____ with unity feedback factor.

-14

Question ID : 50389010901
 Status : Answered
 Chosen Option : 1

ddressing mode of 8085 microprocessor in the following instruction

- ☐ ediate
- ☐ ect
- ☐ ied
- ☐ xt

Question ID : 50389010919
 Status : Answered
 Chosen Option : 1

For a signal $y(t) = u(t-2) - u(t-4)$, evaluate $\int_{-\infty}^{\infty} x(t)\delta(t)dt$

Question ID : 50389010881
Status : Answered
Chosen Option : 2

decimal equivalent of an octal number 10.

1

Question ID : 50389010913
Status : Answered
Chosen Option : 4

modulation factor if $V_{\max}=10V$, $V_{\min}=2$ in an AM system.

Question ID : 50389010945
Status : Answered
Chosen Option : 3

DTFT of a sequence $x[n]$ is $X[k] = [6, 2]$, compute its inverse.

:-[2,2]

:-[2,4]

:-[4,4]

:-[4,2]

Question ID : 50389010886
Status : Answered
Chosen Option : 2

equivalent resistance if two resistors of 50Ω connected in parallel with a
r of 25Ω .

Ω

Ω

Question ID : 50389010870
Status : Answered
Chosen Option : 1

Thevenized and found to have parameters as 25Ω and $10V$. What will be the
wer transferred to the load?

Question ID : 50389010874
Status : Answered
Chosen Option : 2