



Uttar Pradesh Metro Rail Corporation Limited

उत्तर प्रदेश मेट्रो रेल कॉर्पोरेशन लिमिटेड

A joint Venture of Govt. of India and Govt. of Uttar Pradesh

Participant ID	
Participant Name	
Test Center Name	
Test Date	12/05/2024
Test Time	12:30 PM - 2:30 PM
Subject	Assistant Manager S and T

Section : Section A

Q.1 In a Ge p-n junction at 300 K, $N_D = 5 \times 10^{18} \text{ cm}^{-3}$; $N_A = 6 \times 10^{16} \text{ cm}^{-3}$; $n_i = 1.5 \times 10^{10} \text{ cm}^{-3}$. What is the minority electron density?

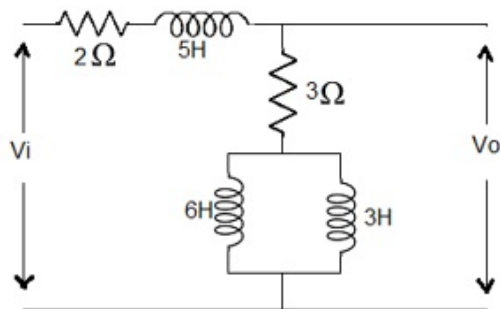
- Ans
- A. 4250 e/cm³
 - B. 3750 e/cm³
 - C. 5000 e/cm³
 - D. 2500 e/cm³

Question ID : 630680214297

Status : Answered

Chosen Option : B

Q.2 Find the transfer function for the given RL circuit.



- Ans
- A. $\frac{3 + 2S}{7(S + 5/7)}$
 - B. $\frac{9S + 3}{7S + 5}$
 - C. $\frac{2 + 3S}{S + 7/5}$
 - D. $\frac{3 + 2S}{S + 5/7}$

Question ID : 630680117127

Status : Answered

Chosen Option : A

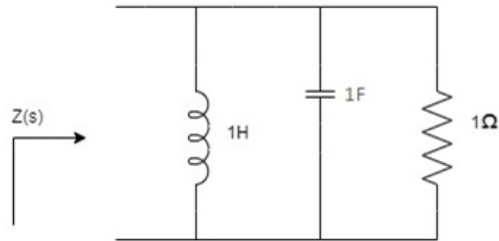
Q.3 A Schmitt trigger has an upper trigger point as 2.5V and the lower trigger point as 1.5V. Calculate the hysteresis voltage.

- Ans A. 1.5 V
 B. 2.5 V
 C. 4 V
 D. 1 V

Question ID : 630680118580
 Status : Answered
 Chosen Option : C

Q.4 For the following parallel RLC circuit, the driving point impedance is given by

$$Z(S) = \frac{0.4S}{S^2 + 0.2S + 1}$$



The values of R, L and C are respectively:

- Ans A. L = 0.4 H, R = 2 Ω, C = 2.5 F
 B. L = 2.5 H, R = 2 Ω, C = 0.5 F
 C. L = 2 H, R = 0.5 Ω, C = 2.5 F
 D. L = 2.5 H, R = 0.5 Ω, C = 0.4 F

Question ID : 630680146539
 Status : Answered
 Chosen Option : A

Q.5 In the design of a control system, the excess bandwidth should be avoided since:

- Ans A. it leads to sluggish response of the system
 B. the relative stability of the system decreases
 C. it leads to fast response of the system
 D. the noise can affect the system's performance

Question ID : 630680139577
 Status : Not Answered
 Chosen Option : --

Q.6 What should come in place of the question mark (?) in the given series?

23, 35, 47, 59, 71, ?

- Ans A. 82
 B. 81
 C. 83
 D. 84

Question ID : 630680531729
 Status : Answered
 Chosen Option : C

Q.7 The forward path and feedback transfer functions of a control system are given as $G(s)$ and $H(s)$ respectively. The polar plot of a system is the magnitude and phase plot in polar coordinates for:

- Ans
- A. $(1 + G(j\omega)H(j\omega))$
 - B. $G(j\omega)H(j\omega)$
 - C. $G(j\omega)/(1 + G(j\omega))$
 - D. $G(j\omega)/(1 + G(j\omega)H(j\omega))$

Question ID : 630680139580

Status : Answered

Chosen Option : D

Q.8 Rajesh ranked 44th from the top and 25th from the bottom in his class. How many students are there in his class?

- Ans
- A. 66
 - B. 68
 - C. 69
 - D. 67

Question ID : 630680729454

Status : Answered

Chosen Option : B

Q.9 Mr. Mohan buys a chair at ₹1,020 after getting two successive discounts of 20% and $x\%$, respectively, on the marked price. If the marked price of the chair is ₹1,500, then the value of x is:

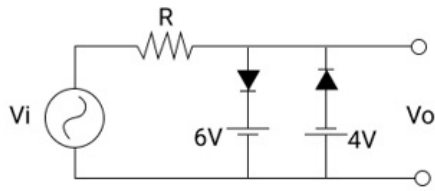
- Ans
- A. 10
 - B. 15
 - C. 12
 - D. 18

Question ID : 630680227089

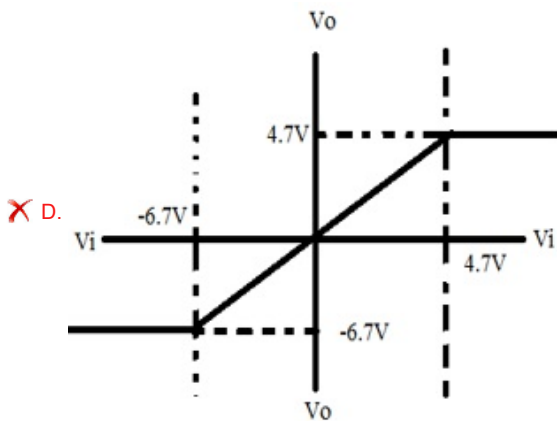
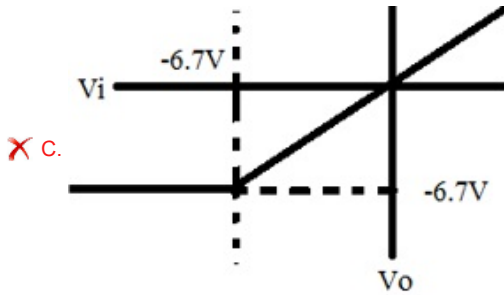
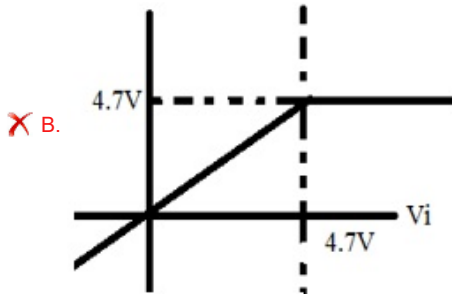
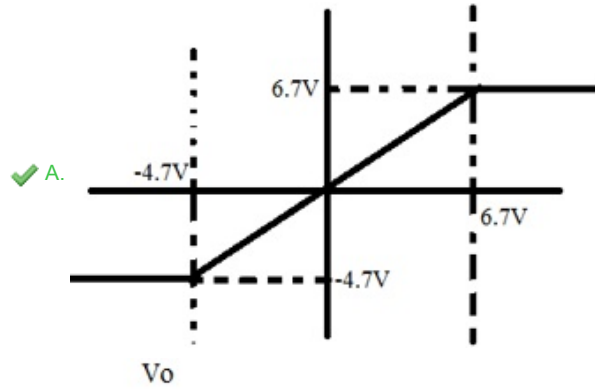
Status : Answered

Chosen Option : B

Q.10 In the given circuit, an input wave of $15\sin\omega t$ is applied. What would be the transfer characteristics of the given circuit, given that the cut-in voltage of the diodes is $0.7V$?

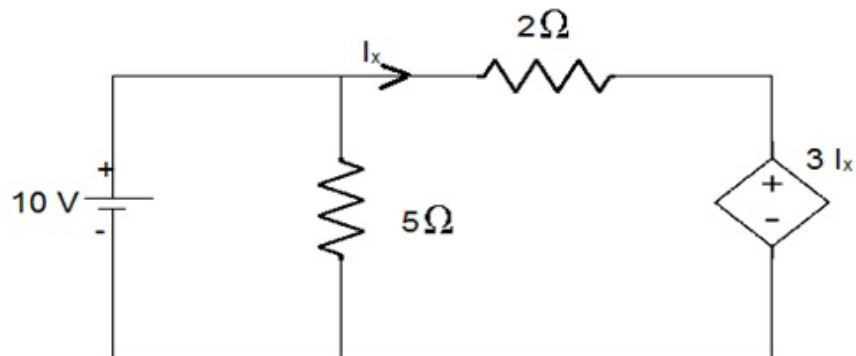


Ans



Question ID : 630680119957
 Status : Answered
 Chosen Option : A

Q.11 Find I_x in the given figure using source transformation.



- Ans
- A. 0.5 A
 - B. 1 A
 - C. 2 A
 - D. 4 A

Question ID : 630680117102
Status : Answered
Chosen Option : C

Q.12 Sarojini Naidu became the second woman to preside over the Indian National Congress at the Kanpur Session in:

- Ans
- A. 1920
 - B. 1925
 - C. 1930
 - D. 1915

Question ID : 630680777731
Status : Answered
Chosen Option : B

Q.13 The outputs of a full adder and a full subtractor are _____.

- Ans
- A. $AB + BC + CA$
 - B. same
 - C. different
 - D. complements of each other

Question ID : 630680103575
Status : Answered
Chosen Option : B

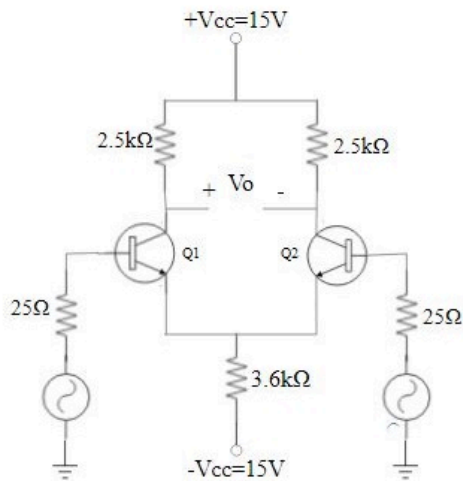
Q.14 Complete the sentence with the appropriate word.

Shahid and Junaid watched an _____ IPL match yesterday.

- Ans
- A. Excitement
 - B. Excitedly
 - C. Excited
 - D. Exciting

Question ID : 630680777704
Status : Answered
Chosen Option : A

Q.15 Estimate the gain in the following circuit. Consider $V_{BE} = 0.7 \text{ V}$ and $\beta = 100$.



- Ans
- A. 176.7
 - B. 193.47
 - C. 201.8
 - D. 198.6

Question ID : 630680390634

Status : Not Attempted and Marked For Review

Chosen Option : --

Q.16 An open drain CMOS circuit is analogous to which of the following options?

- Ans
- A. Open base TTL
 - B. Open collector TTL
 - C. Open emitter TTL
 - D. Open emitter TTL and open base TTL

Question ID : 630680121087

Status : Not Attempted and Marked For Review

Chosen Option : --

Q.17 Consider an angle modulated signal represented by $x(t) = 5 \cos(2\pi \times 10^6 t + 20 \sin(4\pi \times 10^3 t))$. The maximum phase deviation from the carrier phase is (carrier frequency is 10^6 Hz):

- Ans
- A. 5 rad
 - B. 10 rad
 - C. 40 rad
 - D. 20 rad

Question ID : 630680146381

Status : Answered

Chosen Option : D

Q.18 For the given specifications of a Schottky TTL logic gate, what is the fan-out?

- a) Maximum output low state current of 10 milli Ampere
- b) Maximum output high state current of 0.5 milli Ampere
- c) Maximum input low state current of 1 milli Ampere
- d) Maximum input high state current of 20 micro Ampere.

Ans A. 0.04
 B. 25
 C. 0.1
 D. 10

Question ID : 630680132901
 Status : Not Answered
 Chosen Option : --

Q.19 If \bar{A} is the vector field, then $\oint \bar{A} \cdot d\mathbf{l}$ is equal to:

Ans A. $\oint_S (\nabla \times A) \cdot ds$
 B. $\iint_S (\nabla \times A) \cdot ds$
 C. $\int_V (\nabla \cdot A) \cdot dv$
 D. $\oint (\nabla \cdot A) dl$

Question ID : 63068063920
 Status : Answered
 Chosen Option : B

Q.20 1873 में, ज्योतिराव गोविंदराव फुले ने _____ की शुरुआत की, जिसका उद्देश्य तथाकथित अछूत और पिछड़े वर्ग के लोगों के लिए सामाजिक न्याय की मांग करना था।

Ans A. रामकृष्ण मिशन
 B. सत्यशोधक समाज
 C. ब्रह्म समाज
 D. आर्य समाज

Question ID : 630680777729
 Status : Answered
 Chosen Option : B

Q.21 The power in the signal $s(t) = 14\cos\left(100\pi t - \frac{\pi}{2}\right) + 10\sin(30\pi t)$ is equal to _____

Ans A. 150.34
 B. 149.32
 C. 148
 D. 48

Question ID : 630680211452
 Status : Answered
 Chosen Option : C

Q.22 Complete the sentence with the appropriate word.

The violinist has been playing _____ the past two hours.

- Ans A. from
 B. since
 C. on
 D. for

Question ID : 630680777706
 Status : Answered
 Chosen Option : D

Q.23 For a unity feedback system with the open-loop transfer function $G(s) =$

$\frac{K}{s(s+1)(s+2)}$, the system is stable for:

- Ans A. $K = 6$
 B. $0 < K < 6$
 C. $K < 6$
 D. $K > 6$

Question ID : 630680146553
 Status : Answered
 Chosen Option : C

Q.24 The characteristic equation of J-K flip-flop is similar to _____ flip-flop.

- Ans A. D
 B. S-R
 C. gated T
 D. T

Question ID : 630680103586
 Status : Answered
 Chosen Option : D

Q.25 किस राजा ने बौद्ध वास्तुकला को प्रभावित किया?

- Ans A. बाबर
 B. शाहजहाँ
 C. अशोक
 D. अकबर

Question ID : 630680777738
 Status : Not Answered
 Chosen Option : --

Q.26 The Kaveri River flows through which states of India?

- Ans A. Tamil Nadu and Andhra Pradesh
 B. Kerala and Andhra Pradesh
 C. Telangana and Karnataka
 D. Karnataka and Tamil Nadu

Question ID : 630680777733
 Status : Answered
 Chosen Option : D

Q.27 Which of the following is true for PROM?

- Ans A. Has programmable OR array and programmable AND array
 B. Has fixed AND array and programmable OR array
 C. Has fixed OR array and programmable AND array
 D. Has fixed OR array and fixed AND array

Question ID : 630680132925
 Status : Answered
 Chosen Option : D

Q.28 एक बल्लेबाज अपनी 11वीं पारी में 86 रन बनाता है जिससे उसके औसत में 3 की वृद्धि होती है। 11वीं पारी के बाद उसका औसत कितना है?

- Ans A. 56
 B. 86
 C. 89
 D. 59

Question ID : 630680748266
 Status : Answered
 Chosen Option : A

Section : Section B

Q.1 For a transistor, $I_B = 20\mu A$; $I_C = 2mA$ and $\beta = 80$. Calculate I_{CBO} .

- Ans A. 0.0012 mA
 B. 0.01 mA
 C. 0.042 mA
 D. 0.0048 mA

Question ID : 630680161717
 Status : Answered
 Chosen Option : D

Q.2 2 जनवरी 2023 को, दिल्ली उच्च न्यायालय ने दिल्ली सरकार को उन एचआईवी (HIV) पॉजिटिव व्यक्तियों को मुफ्त भोजन और चिकित्सा उपचार सुनिश्चित करने का निर्देश दिया है, जो _____ हैं और राष्ट्रीय राजधानी में इसे वहन करने में असमर्थ हैं।

- Ans A. ग्रामीण क्षेत्रों में निवास कर रहे
 B. गरीबी रेखा से नीचे
 C. गरीबी रेखा से ऊपर
 D. सरकारी नौकरियों में कार्यरत

Question ID : 630680777725
 Status : Answered
 Chosen Option : A

Q.3 Pick the word that is wrongly spelt.

- Ans A. Conceive
 B. Believe
 C. Acheive
 D. Deceive

Question ID : 630680777716
 Status : Answered
 Chosen Option : C

Q.4 Read the given statements and conclusions carefully. Assuming that the information given in the statements is true, even if it appears to be at variance with commonly known facts, decide which of the given conclusions logically follow(s) from the statements.

Statements:

All lions are tigers.
Some tigers are cats.
No cat is a panther.

Conclusions:

(I) Some lions are cats.
(II) No tiger is a panther.

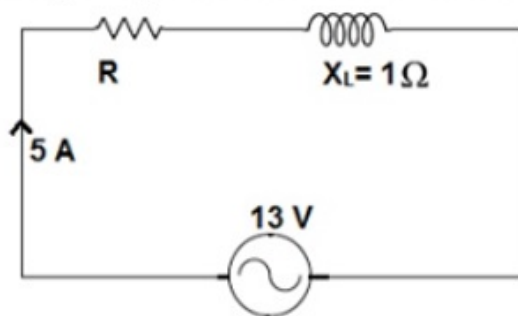
- Ans A. Only conclusion I follows
 B. Both conclusions I and II follow
 C. Only conclusion II follows
 D. Neither conclusion I nor II follows

Question ID : 630680729649

Status : Answered

Chosen Option : D

Q.5 Study the given circuit and find the value of resistance (R).



- Ans A. 12 Ω
 B. 2.6 Ω
 C. 2.4 Ω
 D. 3 Ω

Question ID : 630680117070

Status : Answered

Chosen Option : C

Q.6 Maxterms and Minterms are _____ of each other.

- Ans A. complements
 B. nibble
 C. numbers
 D. addition

Question ID : 630680176333

Status : Answered

Chosen Option : A

Q.7 A two-port network is said to be symmetrical and reciprocal if:

- Ans
- A. $Z_{11} = h_{11}$ and $h_{12} = h_{21}$
 - B. $|AD - BC| = 1$
 - C. $Y_{11} = Y_{22}$ and $Y_{12} = Y_{21}$
 - D. $Z_{11} = Z_{22}$ and $Z_{12} \neq Z_{21}$

Question ID : 630680146530

Status : Answered

Chosen Option : C

Q.8 In a lossless medium, $H = -0.1 \cos(\omega t - z) a_x + 0.5 \sin(\omega t - z) a_y$ A/m with $\mu_r = 1$ and $\eta = 60\pi$. Calculate ω .

- Ans
- A. 1.5×10^8 rad/s
 - B. 0.15×10^8 rad/s
 - C. 1.5×10^5 rad/s
 - D. 15×10^8 rad/s

Question ID : 63068075805

Status : Not Attempted and Marked For Review

Chosen Option : --

Q.9 F is the wife of T. U is the husband of I. T is the brother of I. N is the sister of I and T. How is F related to N?

- Ans
- A. Sister's daughter
 - B. Brother's wife
 - C. Husband's sister
 - D. Mother's sister

Question ID : 630680467719

Status : Answered

Chosen Option : B

Q.10 Complete the sentence with the appropriate word.

Rashmi and her friends could not go out _____ it was raining.

- Ans
- A. despite
 - B. nevertheless
 - C. for
 - D. and

Question ID : 630680777707

Status : Not Attempted and Marked For Review

Chosen Option : --

Q.11 Which of the following statements for the complex exponential signal $x(n) = \sigma^n e^{j(\omega n + \Phi)}$ is NOT true?

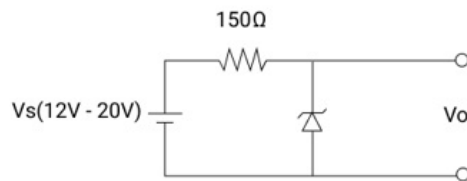
- Ans A. For $|\sigma| = 1$, the real and imaginary parts of complex exponential sequence are sinusoidal.
- B. For $|\sigma| > 1$, the amplitude of the sinusoidal sequences decreases exponentially.
- C. For $|\sigma| > 1$, the amplitude of the sinusoidal sequences increases exponentially.
- D. For $|\sigma| < 1$, the amplitude of the sinusoidal sequences decays exponentially.

Question ID : 630680203466

Status : Not Attempted and Marked For Review

Chosen Option : --

Q.12 In the given circuit, the Zener diode present has Zener voltage as 6.5V and Zener resistance as 9Ω . What would be the range of output voltage?



- Ans A. 6.835 V to 7.28 V
- B. 6.811 V to 7.26 V
- C. 6.801 V to 7.24 V
- D. 6.842 V to 7.25 V

Question ID : 630680119956

Status : Not Attempted and Marked For Review

Chosen Option : --

Q.13 When a signal $f(t) = 12t^3 + 10t^2 + 5t - 1$ is multiplied with an impulse signal of time delay 5 units and then integrated over a time period from $-\infty$ to ∞ the value obtained will be _____

- Ans A. 1776
- B. 1774
- C. 1773
- D. 1750

Question ID : 630680211458

Status : Not Answered

Chosen Option : --

Q.14 When a processor can fetch an instruction on every cycle, then what is the pipeline called?

- Ans A. Fully pipelined
- B. Super pipeline
- C. Long pipeline
- D. Deep pipelined

Question ID : 630680132893

Status : Not Answered

Chosen Option : --

Q.15 एक व्यक्ति ने दो वस्तुएँ समान मूल्य पर बेचीं। एक पर उसे 20% का लाभ हुआ और दूसरे पर उसे 20% की हानि हुई। उसका कुल लाभ या हानि प्रतिशत ज्ञात कीजिए।

- Ans
- A. 2% लाभ
 - B. 3% हानि
 - C. 4% हानि
 - D. 5% लाभ

Question ID : 630680111598
Status : Answered
Chosen Option : C

Q.16

A 100- Ω resistor and a 10- μ F capacitor are connected in parallel. The network has a unit step current. Under the steady-state condition, the total current flows through:

- Ans
- A. only the capacitor
 - B. neither the resistor nor the capacitor
 - C. only the resistor
 - D. both the capacitor and the resistor

Question ID : 630680117316
Status : Answered
Chosen Option : C

Q.17 The average conversion time of an n bit successive approximation type A to D converter is 32 micro seconds for a 2 MHz clock. At 3 MHz, what will be the average conversion time?

- Ans
- A. 10.66 micro seconds
 - B. 96 micro seconds
 - C. 48 micro seconds
 - D. 21.33 micro seconds

Question ID : 630680132883
Status : Answered
Chosen Option : D

Q.18 Consider a super-heterodyne receiver working in the frequency range of 88MHz–108 MHz. The intermediate frequency (in MHz) that can be used so that image frequency problem can be avoided is atleast:

- Ans
- A. 5 MHz
 - B. not possible to be determined till local oscillator frequency is not known
 - C. 20 MHz
 - D. 10 MHz

Question ID : 63068063905
Status : Answered
Chosen Option : B

Q.19 मुंबई के पास, एलीफेंटा गुफाओं में _____ गुफाएँ शामिल हैं।

- Ans
- A. नौ
 - B. सात
 - C. पाँच
 - D. तीन

Question ID : 630680777741
Status : Not Answered
Chosen Option : --

Q.20 If both the resistances R1 and R2 are equal in an astable multivibrator, what would be the time period of the output waveform generated?

- Ans
- A. $2.079 RC$
 - B. $0.693 RC$
 - C. $1.38 RC$
 - D. 0

Question ID : 630680117008
Status : Answered
Chosen Option : C

Q.21 If n is the 2's complement of binary number (m), then which equation is satisfied?

- Ans
- A. $n = m' + 1$
 - B. $n = m'$
 - C. $n = m' - 1$
 - D. $n = m$

Question ID : 630680103529
Status : Answered
Chosen Option : A

Q.22 भारतीय गैंडा, जिसे एक सींग वाला विशाल गैंडा (Greater One-Horned Rhinoceros) भी कहा जाता है, मुख्य रूप से किस भारतीय राज्य में पाया जाता है?

- Ans
- A. असम
 - B. उत्तर प्रदेश
 - C. राजस्थान
 - D. मध्य प्रदेश

Question ID : 630680777734
Status : Answered
Chosen Option : A

Q.23 The greatest value among the fractions $\frac{1}{5}$, $\frac{2}{9}$, $\frac{3}{14}$ and $\frac{4}{19}$ is _____.

- Ans
- A. $\frac{4}{19}$
 - B. $\frac{1}{5}$
 - C. $\frac{3}{14}$
 - D. $\frac{2}{9}$

Question ID : 630680530450
Status : Answered
Chosen Option : D

Q.24 Consider a 16-point QAM signal scheme. The minimum bandwidth needed to transmit data at the rate of 90 Mbits per second is:

- Ans A. 90 MHz
 B. 45 MHz
 C. 22.5 MHz
 D. 180 MHz

Question ID : 630680146408

Status : Answered

Chosen Option : B

Q.25 1867 में बॉम्बे में स्थापित प्रार्थना समाज ने विधवा पुनर्विवाह और जाति समानता जैसे धार्मिक और सामाजिक सुधारों पर ध्यान केंद्रित किया। आंदोलन के प्रमुख संस्थापकों में से एक कौन थे?

- Ans A. बी.आर. अम्बेडकर
 B. एम.जी. रानाडे
 C. महात्मा गांधी
 D. रवीन्द्रनाथ टैगोर

Question ID : 630680777730

Status : Answered

Chosen Option : B

Q.26 The Q factor of an RL series circuit is given by:

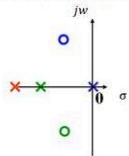
- Ans A. $\frac{R}{L}$
 B. $\frac{L}{R}$
 C. $2\pi f \frac{R}{L}$
 D. $\frac{2\pi f L}{R}$

Question ID : 630680146534

Status : Answered

Chosen Option : D

Q.27 The open loop pole-zero plot of a system is shown in the given figure.



The total number of root-locus branches and the number of branches terminating at infinity are _____ and _____, respectively.

- Ans A. five, one
 B. two, three
 C. three, one
 D. two, two

Question ID : 630680139561

Status : Not Answered

Chosen Option : --

Q.28 How many selection lines are required for 32×1 MUX ?

- Ans A. 4
 B. 8
 C. 2
 D. 5

Question ID : 630680103580
Status : Answered
Chosen Option : D

Section : Section C

Q.1 _____ have unidirectional flow of energy.

- Ans A. Harmonic oscillators
 B. Relaxation oscillators
 C. Both harmonic and relaxation oscillators
 D. Neither harmonic nor relaxation oscillators

Question ID : 630680119967
Status : Not Answered
Chosen Option : --

Q.2 The value of: $5^2 + \sqrt{7^2} - 5\sqrt{100} - 6 =$

- Ans A. -24
 B. -25
 C. -29
 D. -27

Question ID : 630680748256
Status : Not Answered
Chosen Option : --

Q.3 यह प्रश्न निम्नलिखित शब्दों पर आधारित है:

MUG HAS FIN POT

बाएं से पहले शब्द के तीसरे अक्षर और दाएं से पहले शब्द के दूसरे अक्षर के बीच कितने अक्षर होते हैं?

- Ans A. 7
 B. 6
 C. 8
 D. 5

Question ID : 630680729930
Status : Answered
Chosen Option : A

Q.4 Complete the sentence with the appropriate article.

Dr Pandian worked as _____ University Professor for five years.

- Ans A. a
 B. no article
 C. the
 D. an

Question ID : 630680777703

Status : Answered

Chosen Option : A

Q.5 If Laplace transform of $f(t)$ is $F(s) = \frac{s}{(s^2 + a^2)}$, then what would be the value of $\lim_{t \rightarrow \infty} f(t)$?

- Ans A. 1
 B. 0
 C. ∞
 D. between -1 and 1

Question ID : 630680203446

Status : Answered

Chosen Option : A

Q.6 For $\frac{1}{5}$ rate repetition code, generator matrix can be written as:

- Ans A. a unit square matrix of 5 x 5
 B. $G^T = [1 \ 1 \ 1 \ 1 \ 1]$
 C. $G = [1 \ 1 \ 1 \ 1 \ 1]$

D. $G = \begin{bmatrix} 1 & 1 & 1 & 1 & 1 \\ 1 & 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 & 1 \end{bmatrix}$

Question ID : 63068064086

Status : Not Attempted and Marked For Review

Chosen Option : --

Q.7 For a 4 bit half flash ADC, how many comparators are required?

- Ans A. 4
 B. 32
 C. 16
 D. 8

Question ID : 630680182156

Status : Answered

Chosen Option : B

Q.8 राजस्थान की मौजूदा स्वास्थ्य बीमा योजना का क्या नाम है जिसे आयुष्मान भारत के साथ एकीकृत करने का प्रस्ताव है?

- Ans
- A. राजस्थान स्वास्थ्य बीमा योजना
 - B. चिरंजीवी स्वास्थ्य बीमा योजना
 - C. राजस्थान आयुष्मान भारत योजना
 - D. मुख्यमंत्री स्वास्थ्य बीमा योजना

Question ID : 630680777723
Status : Answered
Chosen Option : B

Q.9 _____ longest river of southern India is also called as Dakshin Ganga.

- Ans
- A. Krishna River
 - B. Tungabhadra River
 - C. Periyar River
 - D. Godavari River

Question ID : 630680777732
Status : Answered
Chosen Option : D

Q.10

A 100- Ω resistor, a 10- μ F capacitor and a 1-mH inductor are connected in parallel. The network has a unit step current. Under the steady-state condition, the total current flows through:

- Ans
- A. both the capacitor and the resistor
 - B. only the capacitor
 - C. only the inductor
 - D. only the resistor

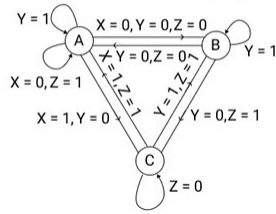
Question ID : 630680117317
Status : Not Attempted and Marked For Review
Chosen Option : --

Q.11 While calculating the impedance parameters, we need to:

- Ans
- A. create open circuit either at input port or output port
 - B. create open circuit at output and short circuit at input port
 - C. create short circuit either at input port or output port
 - D. create open circuit at input and short circuit at output port

Question ID : 630680146529
Status : Answered
Chosen Option : A

Q.12 The state transition diagram with 3 inputs X,Y,Z and 3 states A,B,C for a finite state machine is given. If the present state is B, which table correctly represents the state transition table for state B?



Ans

A.

X	Y	Z	Next State
0	0	0	A
0	0	1	C
0	1	0	B
0	1	1	B
1	0	0	A,B
1	0	1	A
1	1	0	B
1	1	1	B

B.

X	Y	Z	Next State
0	0	0	A
0	0	1	C
0	1	0	B
0	1	1	B
1	0	0	A
1	0	1	C
1	1	0	B
1	1	1	B

C.

X	Y	Z	Next State
0	0	0	A
0	0	1	C
0	1	0	B
0	1	1	B
1	0	0	A
1	0	1	C
1	1	0	C,A
1	1	1	B

X	Y	Z	Next State
0	0	0	A
0	0	1	C
0	1	0	B
0	1	1	B
1	0	0	A
1	0	1	C
1	1	0	B
1	1	1	A,B

✗ D.

Question ID : 630680132916

Status : Not Attempted and Marked For Review

Chosen Option : --

Q.13 _____, 1946 को भारत की अंतरिम सरकार का गठन नवनिर्वाचित संविधान सभा से किया गया था, जिसमें प्रधान मंत्री की शक्तियां परिषद के उपाध्यक्ष जवाहरलाल नेहरू को दी गई थी।

- Ans
- ✗ A. 15 अगस्त
 - ✗ B. 10 अक्टूबर
 - ✗ C. 25 नवंबर
 - ✓ D. 2 सितंबर

Question ID : 630680777727

Status : Answered

Chosen Option : B

Q.14 What is the unit of $\nabla \cdot \bar{D}$? (Consider that \bar{D} is electric flux density.)

- Ans
- ✓ A. Coulomb/meter³
 - ✗ B. Coulomb-metre
 - ✗ C. Coulomb/meter²
 - ✗ D. Coulomb

Question ID : 63068063854

Status : Answered

Chosen Option : A

Q.15 How many memory cycles does the instruction LDA 2000 H take in 8085 microprocessor of 5 MHz clock?

- Ans
- ✗ A. 0.8 micro second
 - ✓ B. 2.6 micro seconds
 - ✗ C. 1.4 micro seconds
 - ✗ D. 2 micro seconds

Question ID : 630680182162

Status : Answered

Chosen Option : A

Q.16 Box 1 contains 1 white and 499 red balls. Box 2 contains 1 red and 499 white balls. A ball is picked from a randomly selected box with equal probability. If the ball is white, then the probability that it came from box 1 is:

- Ans A. 0.002
 B. 0.5
 C. 0.999
 D. 0.998

Question ID : 630680146392
Status : Not Answered
Chosen Option : --

Q.17 When V_{GS} of a MOSFET with $V_T = 400$ mV making in saturation is 900 mV, the drain current is 1 mA. If the channel width modulation is neglected and saturation is assumed, what will be the value of I_D for $V_{GS} = 1400$ mV?

- Ans A. 3 mA
 B. 5 mA
 C. 2 mA
 D. 4 mA

Question ID : 630680214306
Status : Answered
Chosen Option : D

Q.18 Find the correct 2-port network parameter suitable for the analysis of a parallel-series connection. This means the input ports of the two networks are connected in parallel and the output ports of the two networks are connected in series.

- Ans A. g parameters
 B. ABCD parameters
 C. h parameters
 D. Inverse ABCD parameters

Question ID : 630680117320
Status : Answered
Chosen Option : A

Q.19 Complete the sentence with the appropriate word.

Let us _____ about the dispute.

- Ans A. talk
 B. express
 C. discourse
 D. consider

Question ID : 630680777708
Status : Answered
Chosen Option : A

Q.20 Select the pair that follows the same pattern as the one followed by the two sets of pairs given below. Both pairs follow the same pattern.

LJN : OHK
RRO : UPL

- Ans A. OHG : RFC
 B. QHL : TFH
 C. QFI : TDF
 D. NKJ : QHG

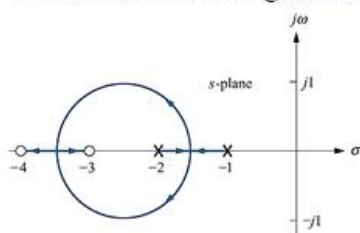
Question ID : 630680585694
 Status : Answered
 Chosen Option : C

Q.21 Which of the following transistor configurations gives more voltage gain?

- Ans A. Common collector configuration
 B. Common emitter configuration
 C. Common transmitter configuration
 D. Common base configuration

Question ID : 630680214301
 Status : Answered
 Chosen Option : D

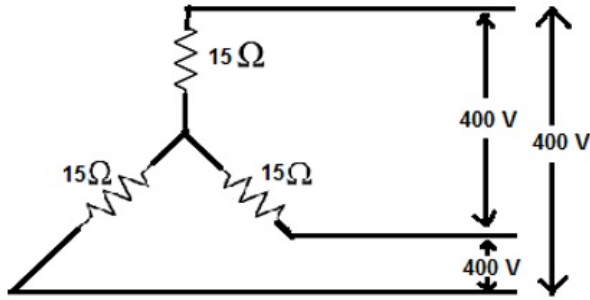
Q.22 Which of the following statements is correct for the given root-locus plot?



- Ans A. The root-locus plot is valid and has two asymptotes.
 B. The root-locus plot is invalid.
 C. The root-locus plot is valid and has no asymptotes.
 D. The root-locus plot is valid and has two breakaway points.

Question ID : 630680139558
 Status : Answered
 Chosen Option : C

Q.23 In the given 3-phase balanced star connected load, calculate the power rating of each resistor.



- Ans
- A. 3226.67 W
 - B. 1876.27 W
 - C. 3286.67 W
 - D. 3555.56 W

Question ID : 630680117099

Status : Answered

Chosen Option : C

Q.24 Using the linearity property, what should be the Laplace transform of the function $x(t) = 24e^{-2t}u(t) + 12e^{4t}u(t) + 6e^{-t}u(t)$, where $u(t)$ is the unit step function?

- Ans
- A. $\frac{1}{2} * \left(\frac{24}{(s+2)} + \frac{12}{(s-4)} + \frac{6}{(s+1)} \right)$
 - B. $2 * \left(\frac{12}{(s+2)} + \frac{6}{(s-4)} + \frac{3}{(s+1)} \right)$
 - C. $2 * \left(\frac{12}{(s-2)} + \frac{6}{(s+4)} + \frac{3}{(s-1)} \right)$
 - D. $\frac{1}{2} * \left(\frac{24}{(s-2)} + \frac{12}{(s+4)} + \frac{6}{(s-1)} \right)$

Question ID : 630680203442

Status : Answered

Chosen Option : B

Q.25 जब किसी इलेक्ट्रिक राइटिंग पैड के मूल्य में 25% की वृद्धि होती है, तो इसकी बिक्री में 40% की कमी होती है। राजस्व (revenue) पर शुद्ध प्रभाव कितना होगा?

- Ans
- A. 25% की कमी
 - B. 25% की वृद्धि
 - C. 15% की वृद्धि
 - D. 15% की कमी

Question ID : 630680731533

Status : Answered

Chosen Option : A

Q.26 हड़प्पाकालीन नगर धोलावीरा अनेक उपलब्धियों के लिए प्रसिद्ध है।
कौन-सा विकल्प उपरोक्त को प्रतिबिंबित नहीं करता है?

- Ans
- A. जल प्रबंधन
 - B. निर्माण तकनीक
 - C. शिक्षा
 - D. नगर योजना

Question ID : 630680777742
Status : Answered
Chosen Option : C

Q.27 Which of the following is true for a programmable logic array?

- Ans
- A. Has programmable AND array and programmable OR array
 - B. Has fixed AND array and programmable OR array
 - C. Has fixed OR array and programmable AND array
 - D. Has fixed AND array and fixed OR array

Question ID : 630680132924
Status : Answered
Chosen Option : A

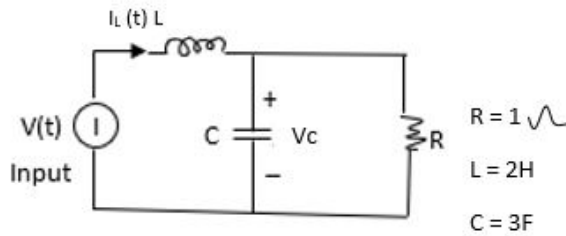
Q.28 A wide band pass filter is given with lower frequency as 500 Hz and higher frequency as 1.5 kHz. What would be the Q value of the given filter?

- Ans
- A. 0.86
 - B. 0.38
 - C. 0.56
 - D. 0.23

Question ID : 630680117000
Status : Answered
Chosen Option : A

Section : Section D

Q.1



For the electric circuit shown $\begin{bmatrix} \frac{dV_C}{dt} \\ \frac{di_L}{dt} \end{bmatrix} =$

Ans

A. $\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix} \begin{bmatrix} V_C(t) \\ i_L(t) \end{bmatrix} + \begin{bmatrix} 0 \\ -0.5 \end{bmatrix} V(t)$

B. $\begin{bmatrix} \frac{1}{3} & -\frac{1}{3} \\ \frac{1}{2} & 0 \end{bmatrix} \begin{bmatrix} V_C(t) \\ i_L(t) \end{bmatrix} + \begin{bmatrix} 0 \\ -0.5 \end{bmatrix} V(t)$

C. $\begin{bmatrix} -\frac{1}{3} & \frac{1}{3} \\ -\frac{1}{2} & 0 \end{bmatrix} \begin{bmatrix} i_L(t) \\ V_C(t) \end{bmatrix} + \begin{bmatrix} 0 \\ 0.5 \end{bmatrix} V(t)$

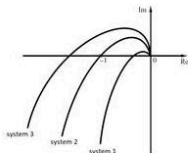
D. $\begin{bmatrix} -\frac{1}{3} & \frac{1}{3} \\ -\frac{1}{2} & 0 \end{bmatrix} \begin{bmatrix} V_C(t) \\ i_L(t) \end{bmatrix} + \begin{bmatrix} 0 \\ 0.5 \end{bmatrix} V(t)$

Question ID : 630680110780

Status : Not Answered

Chosen Option : --

Q.2 Consider the polar plots of three systems in the $GH(j\omega)$ plane shown in the given figure. If $\zeta_1, \zeta_2, \zeta_3$ are the damping ratios of the given systems, then:



Ans

A. $\zeta_1 < 0, \zeta_2 = 0, \zeta_3 < 0$

B. $\zeta_1 > 0, \zeta_2 < 0, \zeta_3 < 0$

C. $\zeta_1 > 0, \zeta_2 = 0, \zeta_3 > 0$

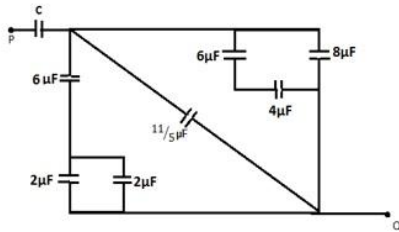
D. $\zeta_1 > 0, \zeta_2 = 0, \zeta_3 < 0$

Question ID : 630680139583

Status : Not Attempted and Marked For Review

Chosen Option : --

Q.3 In the given figure, if capacitance between P and Q is $10 \mu\text{F}$, then what will be the value of C?



- Ans
- A. $20 \mu\text{F}$
 - B. $10 \mu\text{F}$
 - C. $15 \mu\text{F}$
 - D. $30 \mu\text{F}$

Question ID : 630680117090

Status : Answered

Chosen Option : D

Q.4 Rearrange the sentences to form a coherent paragraph.

- A. The Gutenberg Press changed that forever.
- B. Before its advent, books were handwritten by scribes, a laborious and time-consuming process that limited their availability to the privileged few.
- C. The Gutenberg Press, invented by Johannes Gutenberg in the mid-15th century, was a transformative moment in human history, marking a revolutionary shift in the production and dissemination of knowledge.
- D. This printing revolution facilitated the spread of knowledge and ideas, democratizing access to information and ultimately shaping the course of history.
- E. By using movable type and a mechanical press, Gutenberg was able to mass-produce books, making them more affordable and accessible.

- Ans
- A. A, B, E, D, C
 - B. C, B, A, E, D
 - C. D, E, A, C, B
 - D. C, D, A, E, B

Question ID : 630680777710

Status : Not Answered

Chosen Option : --

Q.5 निम्नलिखित में से कौन-सा विकल्प बौद्ध वास्तुकला का प्रतीक नहीं है?

- Ans
- A. तीन रत्न
 - B. पवित्र पुस्तक
 - C. कमल का फूल
 - D. बुद्ध पदचिह्न

Question ID : 630680777737

Status : Answered

Chosen Option : C

Q.6 पानीपत में काबुली बाग मस्जिद का निर्माण किसके द्वारा करवाया गया था?

- Ans
- A. शाहजहाँ
 - B. अकबर
 - C. औरंगजेब
 - D. बाबर

Question ID : 630680777739

Status : Not Answered

Chosen Option : --

Q.7 Consider the transfer function of the compensator as $G_c(s) = \frac{s+zi}{s+pi}$. The condition for the compensator to act as phase lead network is:

- Ans
- A. $zi > pi$
 - B. $pi = 0$
 - C. $zi < pi$
 - D. $zi = pi$

Question ID : 630680146548
Status : Answered
Chosen Option : C

Q.8 The z transform and its ROC of a system are given as $H(z) = \frac{z}{(z-0.6)}$ and $|z| > 0.6$, respectively. Then what would be the possible impulse response of the given system?

- Ans
- A. $(0.6)^n u[n]$
 - B. $(0.6)^n u[-n-1]$
 - C. $-(0.6)^n u[-n-1]$
 - D. $-(0.6)^n u[n]$

Question ID : 630680203438
Status : Answered
Chosen Option : A

Q.9 In a certain code language, 'PEND' is coded as '5761' and 'DENT' is coded as '7356'. What is the code for 'T' in the given code language?

- Ans
- A. 3
 - B. 6
 - C. 5
 - D. 7

Question ID : 630680729895
Status : Answered
Chosen Option : A

Q.10 Match the following signals with their energies.

Group A	Group B
1) $X(t) = e^{-15t} u(t)$	A 1.067J
2) $x(n) = \left(\frac{1}{4}\right)^n u(n)$	B 1 J
3) $x(n) = \cos\left(\frac{\pi n}{6}\right)$	C 0.033J
4) $X(t) = \text{COS}2\pi t(u(t)-u(t+2))$	D ∞

- Ans
- A. 1-B, 2-A, 3-D, 4-C
 - B. 1-C, 2-A, 3-D, 4-B
 - C. 1-C, 2-D, 3-A, 4-B
 - D. 1-A, 2-B, 3-C, 4-D

Question ID : 630680203458
Status : Answered
Chosen Option : B

Q.11 Given below is a sentence with a word in bold. Identify the antonym of that word in the context of the sentence.

The **incessant** sound of the drumbeats made it difficult for the students to write their exam.

- Ans
- A. ongoing
 - B. continuous
 - C. occasional
 - D. permanent

Question ID : 630680777714
Status : Answered
Chosen Option : C

Q.12 A, B और C ने एक व्यवसाय शुरू किया। उन्होंने क्रमशः 6 महीने, 12 महीने और 14 महीने के लिए साझेदारी की। यदि उनका लाभ क्रमशः 5 : 4 : 7 के अनुपात में है, तो उनके संबंधित निवेश का अनुपात _____ है।

- Ans
- A. 5 : 2 : 3
 - B. 2 : 3 : 5
 - C. 2 : 3 : 7
 - D. 1 : 5 : 3

Question ID : 630680748179
Status : Answered
Chosen Option : A

Q.13 Determine the period of oscillation for an astable multivibrator with component values $R_1=2k$, $R_2=20k$, $C_1=0.01\mu F$, $C_2=0.05\mu F$.

- Ans
- A. 0.7 ms
 - B. 0.7 μs
 - C. 1.02 ms
 - D. 1.02 μs

Question ID : 630680118582
Status : Not Answered
Chosen Option : --

Q.14 What is the percentage resolution in a 5-bit DAC?

- Ans
- A. 6.25%
 - B. 3.125%
 - C. 20%
 - D. 3.225%

Question ID : 630680132890
Status : Answered
Chosen Option : B

Q.15 जून 2023 में तमिलनाडु पुलिस द्वारा शुरू की गई 'पेंगल पाथुकाप्ट थित्तम' योजना का प्राथमिक लक्ष्य क्या था?

- Ans
- A. महिलाओं के रोजगार के अवसरों को बढ़ावा देना
 - B. देर रात के दौरान महिलाओं की सुरक्षा सुनिश्चित करना
 - C. सार्वजनिक परिवहन सेवाओं में सुधार करना
 - D. सभी नागरिकों के लिए निःशुल्क परिवहन उपलब्ध कराना

Question ID : 63068077726

Status : Not Attempted and Marked For Review

Chosen Option : --

Q.16 किसी संख्या का 20%, 570 के 20% से 150 से अधिक है। संख्या ज्ञात कीजिए।

- Ans
- A. 1320
 - B. 1170
 - C. 1420
 - D. 1370

Question ID : 630680748278

Status : Answered

Chosen Option : A

Q.17 Find the correct 2-port network parameter suitable for the analysis of a series-parallel connection. This means the input ports of the two networks are connected in series and the output ports of the two networks are connected in parallel.

- Ans
- A. ABCD parameters
 - B. Y parameters
 - C. h parameters
 - D. z parameters

Question ID : 630680117319

Status : Answered

Chosen Option : C

Q.18 An amplifier has an open loop gain of 100, the lower cut-off frequency as 100Hz and upper cut-off frequency as 100kHz. A feedback network with 0.99 feedback factor is connected to the amplifier. Determine the lower and upper cut-off frequency with feedback.

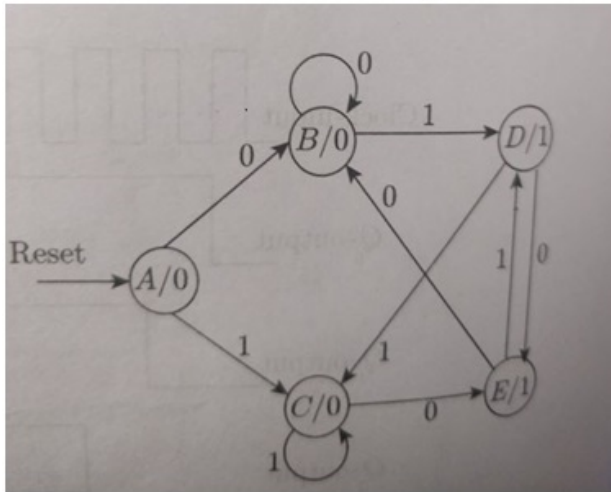
- Ans
- A. 100 Hz and 100 KHz
 - B. 1 Hz and 10 Mhz
 - C. 1 MHz and 10 KHz
 - D. 1 KHz and 100 Hz

Question ID : 630680118587

Status : Answered

Chosen Option : B

Q.19 What sequence does this state diagram of the Moore machine decode?



- Ans
- A. 11 and 00 transitions
 - B. 11 and 01 transitions
 - C. 10 and 01 transitions
 - D. 10 and 11 transitions

Question ID : 630680182169

Status : Not Attempted and Marked For Review

Chosen Option : --

Q.20 भारत में सुंदरवन क्षेत्र किस प्रकार की वनस्पति के लिए जाना जाता है?

- Ans
- A. अल्पाइन वन
 - B. मैंग्रोव
 - C. रेगिस्तानी वनस्पति
 - D. ऊष्णकटिबंधीय वर्षावन

Question ID : 630680777735

Status : Answered

Chosen Option : B

Q.21 If a pole is added at origin to the below given transfer function, the polar plot crosses the negative real axis at ω equals :

$$G(S) = \frac{1}{S(1+ST_1)(1+ST_2)}$$

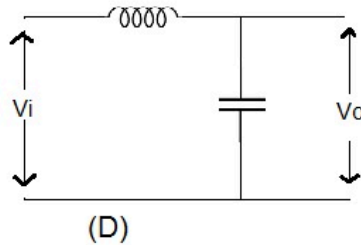
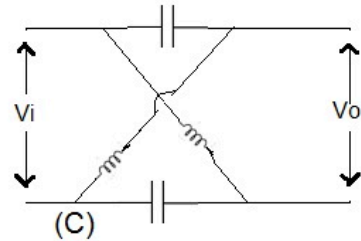
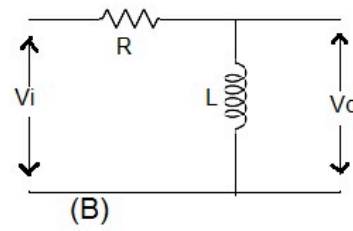
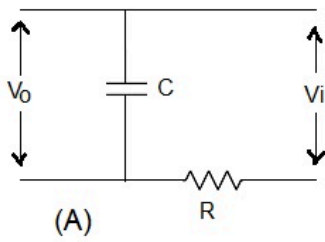
- Ans
- A. $\frac{1}{\sqrt{T_1 T_2}}$
 - B. $\sqrt{T_1 T_2}$
 - C. $T_1 T_2$
 - D. $\frac{1}{T_1 T_2}$

Question ID : 630680110790

Status : Answered

Chosen Option : A

Q.22 Identify all pass filters from the given circuits and select the correct option.



- Ans
- A. D
 - B. B
 - C. A
 - D. C

Question ID : 630680117111
 Status : Answered
 Chosen Option : D

Q.23 A full bridge rectifier circuit has an input frequency of 100Hz. Calculate its output frequency:

- Ans
- A. 200 Hz
 - B. 100 Hz
 - C. 50 Hz
 - D. 25 Hz

Question ID : 630680118569
 Status : Answered
 Chosen Option : B

Q.24 Which of the following flip-flops is basically used for shift registers?

- Ans
- A. J-K
 - B. T
 - C. S-R
 - D. D

Question ID : 630680103592
 Status : Answered
 Chosen Option : D

Q.25 अंग्रेजी वर्णानुक्रम पर आधारित, निम्नलिखित चार अक्षर-समूहों में से तीन अक्षर-समूह एक निश्चित तरीके से समान हैं और इस प्रकार एक समूह बनाते हैं। वह कौन सा अक्षर-समूह है, जो उस समूह से संबंधित नहीं है? (नोट: असंगत अक्षर-समूह, अक्षर-समूह में व्यंजनों/स्वरों की संख्या या उसमें उनकी स्थिति पर आधारित नहीं है।)

- Ans A. PTO
 B. NRL
 C. LPK
 D. RVQ

Question ID : 630680508314

Status : Answered

Chosen Option : B

Q.26 If early voltage $V_A = 100V$, then JFET output resistance r_o when operating in pinch-off at current of 1mA is:

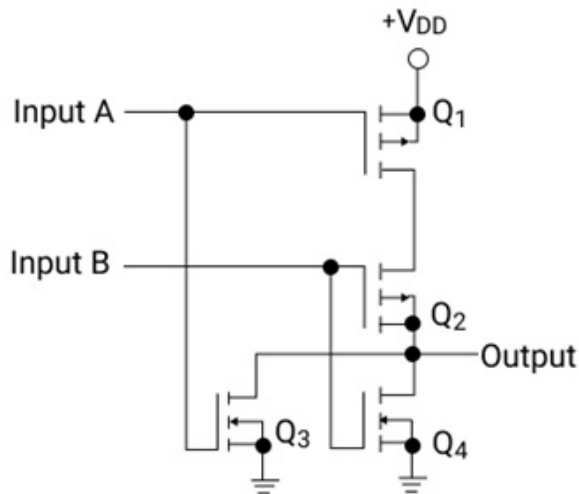
- Ans A. 10K
 B. 1M
 C. 100K
 D. 1K

Question ID : 630680161718

Status : Answered

Chosen Option : C

Q.27 What GATE does the given architecture represent?



- Ans A. OR
 B. NAND
 C. AND
 D. NOR

Question ID : 630680132910

Status : Answered

Chosen Option : D

Q.28 A 60 m long lossless transmission line operating at 4MHz having $Z_0 = 75 \Omega$ is transmitted with a load $Z_L = 80 + j60 \Omega$. Find standing wave ratio (SWR).

- Ans A. 2.125
 B. 2.52
 C. 4.01
 D. ∞

Question ID : 63068075883
 Status : Not Answered
 Chosen Option : --

Section : Section E

Q.1 भारत में उस संस्था का क्या नाम था जिसकी स्थापना 1950 में देश की अर्थव्यवस्था की योजना और विकास की देखरेख के लिए की गई थी?

- Ans A. भारतीय रिजर्व बैंक (RBI)
 B. वित्त मंत्रालय
 C. योजना आयोग
 D. भारतीय प्रतिभूति एवं विनियम बोर्ड (SEBI)

Question ID : 630680777728
 Status : Answered
 Chosen Option : C

Q.2 Assume that in an n-type semiconductor at $T = 300 \text{ K}$, the electron concentration varies linearly from 1×10^{18} to $7 \times 10^{17} \text{ cm}^{-3}$ over a distance of 0.1 cm. What is the magnitude of diffusion current density if the electron diffusion coefficient is $D_n = 22.5 \text{ cm}^2/\text{s}$?

- Ans A. 10.8 A/cm²
 B. 5.4 A/cm²
 C. 8.5 A/cm²
 D. 13.2 A/cm²

Question ID : 630680214295
 Status : Answered
 Chosen Option : A

Q.3 महात्मा गांधी राष्ट्रीय ग्रामीण रोजगार गारंटी अधिनियम (MGNREGA) के अंतर्गत ग्रामीण विकास मंत्रालय, भारत सरकार द्वारा 1 अप्रैल, 2024 से प्रभावी न्यूनतम मजदूरी ₹ _____ प्रति मानव दिवस अधिसूचित की गई।

- Ans A. 250
 B. 374
 C. 300
 D. 400

Question ID : 630680777722
 Status : Answered
 Chosen Option : B

Q.4 किस स्मारक को दक्कन का लघु ताज कहा जाता है?

- Ans A. चारमीनार
 B. चौमहल्ला पैलेस
 C. बीबी का मकबरा
 D. गोल गुम्बज

Question ID : 63068077740
 Status : Not Answered
 Chosen Option : --

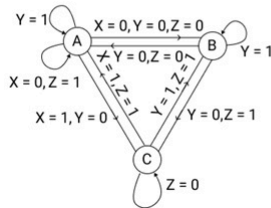
Q.5 Select the correct idiom which means the following:

To talk about something for a long time without coming to the main point

- Ans A. blow hot and cold
 B. beat about the bush
 C. pass the buck
 D. beat a dead horse

Question ID : 63068077712
 Status : Not Answered
 Chosen Option : --

Q.6 The state transition diagram with 3 inputs X,Y,Z and 3 states A,B,C for a finite state machine is given. Which of the following statements is correct?



- Ans A. Transitions from all the states are ambiguous.
 B. Transitions from state A are ambiguously defined.
 C. Transitions from state B are ambiguously defined.
 D. Transitions from state C are ambiguously defined.

Question ID : 630680132918
 Status : Not Answered
 Chosen Option : --

Q.7 Which of the following statements is true?

- Ans A. Programmable logic device includes programmable logic array, programmable array logic, programmable read only memory.
 B. Programmable logic device includes read only memory, programmable array logic, random access memory.
 C. Programmable logic device includes programmable logic array, programmable array logic, read only memory.
 D. Programmable logic device includes read only memory, programmable logic array, random access memory.

Question ID : 630680182178
 Status : Answered
 Chosen Option : A

Q.8 The output of J-K flip-flop is _____ for J=1 and K=1 with 50 kHz clock input.

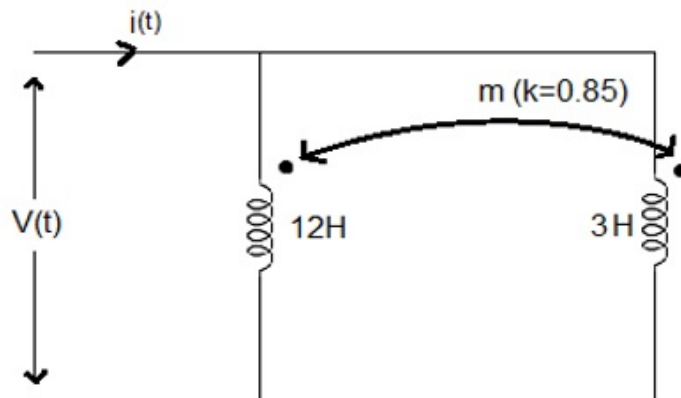
- Ans
- A. a 50 kHz square wave
 - B. constantly LOW
 - C. constantly HIGH
 - D. a 25 kHz square wave

Question ID : 630680103587

Status : Answered

Chosen Option : D

Q.9 Study the given circuit and find the equivalent inductance L_{eq} .



- Ans
- A. 1.267 H
 - B. 25.2 H
 - C. 2.08 H
 - D. 4.8 H

Question ID : 630680117115

Status : Answered

Chosen Option : C

Q.10 थार रेगिस्तान मुख्य रूप से _____ राज्य में स्थित है और इसकी विशेषता शुष्क जलवायु और रेतीले इलाके हैं, जो लगभग 200,000 वर्ग किलोमीटर के क्षेत्रफल को कवर करता है।

- Ans
- A. राजस्थान
 - B. केरल
 - C. पंजाब
 - D. गुजरात

Question ID : 630680777736

Status : Answered

Chosen Option : A

Q.11 The number of free electrons passing through the filament of an electric lamp in 2 hours, when the current through filament is 0.16 A will be:

- Ans
- A. 3×10^{22}
 - B. 7.2×10^9
 - C. 7.2×10^{21}
 - D. 2×10^{26}

Question ID : 630680117081

Status : Answered

Chosen Option : C

Q.12 A CMOS inverter needs:

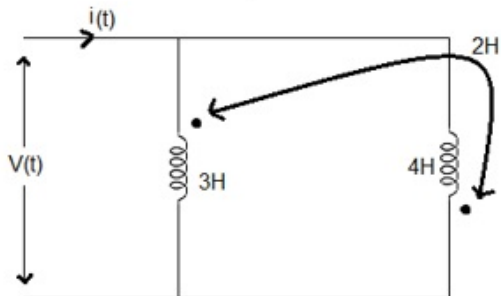
- Ans A. one P channel MOSFET and one N channel MOSFET
 B. two P channel MOSFET and two N channel MOSFET
 C. two P channel MOSFET and one N channel MOSFET
 D. one P channel MOSFET and two N channel MOSFETMOSFETS

Question ID : 630680121086

Status : Answered

Chosen Option : A

Q.13 What will be the equivalent inductance for the given circuit?



- Ans A. 2.66 H
 B. 1.1 H
 C. 0.72 H
 D. 7 H

Question ID : 630680117114

Status : Answered

Chosen Option : C

Q.14 If the polar plot of a control system passes through $(-1, j0)$ point, then this implies that:

- Ans A. the magnitude is 1 dB and phase is 180°
 B. the magnitude is -20 dB and phase is -180°
 C. the magnitude is 20 dB and phase is -180°
 D. the magnitude is 0 dB and phase is 180°

Question ID : 630680139582

Status : Answered

Chosen Option : C

Q.15 ₹5400 पर 5% वार्षिक ब्याज दर से कितनी अवधि (वर्षों में) में ₹1080 का साधारण ब्याज मिलेगा?

- Ans A. 4
 B. 3
 C. 5
 D. 8

Question ID : 630680745719

Status : Answered

Chosen Option : A

Q.16 Boolean expression/function is represented by _____.

- Ans A. minterm only
 B. SOP only
 C. POS only
 D. canonical form

Question ID : 630680103543
 Status : Answered
 Chosen Option : D

Q.17 For a unity feedback system with the open-loop minimum-phase system

transfer function $G(s) = \frac{K}{s(S+1)(S+2)}$, the valid breakaway point for the root

locus is at:

- Ans A. -1.577
 B. -0.422
 C. +1.577
 D. +0.422

Question ID : 630680146550
 Status : Answered
 Chosen Option : B

Q.18 Which of the given systems are linear systems?

1. $\frac{dy}{dt} + 5ty(t) = 8t^4x(t)$

2. $y(t) = 4x(t) + \frac{1}{x(t-1)}$

3. $y(t) = \int_{-t}^t 3x(\tau)d\tau$

- Ans A. 1 and 2 are linear
 B. 2 and 3 are linear
 C. 1 and 3 are linear
 D. all of them are linear

Question ID : 630680203435
 Status : Answered
 Chosen Option : B

Q.19 Consider the transfer function of the compensator as $G_c(s) = \frac{s+zi}{s+pi}$. The condition for the compensator to act as phase lag network is:

- Ans A. $zi = pi$
 B. $zi < pi$
 C. $pi = 0$
 D. $zi > pi$

Question ID : 630680146547
 Status : Answered
 Chosen Option : D

Q.20 In relaxation oscillators the frequency of oscillations can be inferred by _____.

- Ans A. Charging and discharging of capacitors
 B. discharging of capacitors
 C. charging of capacitors
 D. Feedback circuit

Question ID : 630680119966
 Status : Not Answered
 Chosen Option : --

Q.21 निम्नलिखित संख्या-युग्मों में, पहली संख्या पर कुछ गणितीय संक्रियाएं करके दूसरी संख्या प्राप्त की जाती है। X और Y के स्थान पर कौन-सी संख्याएं प्रतिस्थापित की जानी चाहिए ताकि :: के बाईं ओर की दो संख्याओं का पैटर्न :: के दाईं ओर की संख्याओं के पैटर्न के समान हो जाए?
 (नोट: संख्याओं को उसके घटक अंकों में खंडित किए बिना, पूर्ण संख्याओं पर संक्रिया की जानी चाहिए। उदाहरणार्थ 13 – संख्या 13 पर गणितीय संक्रियाएं जैसे 13 में जोड़ना/घटाना/गुणा करना आदि की जा सकती हैं। संख्या 13 को 1 और 3 में खंडित करने और फिर 1 और 3 पर गणितीय संक्रियाएं करने की अनुमति नहीं है।)
 X : 344 :: 12 : Y

- Ans A. X = 6 , Y = 1331
 B. X = 8 , Y = 1730
 C. X = 7 , Y = 1728
 D. X = 7 , Y = 1729

Question ID : 630680515883
 Status : Answered
 Chosen Option : D

Q.22 Complete the sentence with the appropriate article.

_____ Vande Bharat Express is one of the fastest trains in India.

- Ans A. The
 B. No article
 C. An
 D. A

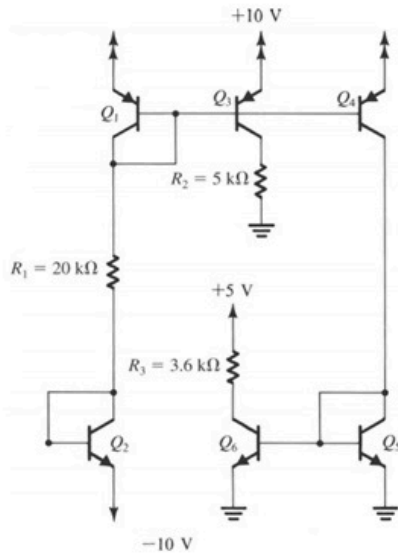
Question ID : 630680777702
 Status : Answered
 Chosen Option : A

Q.23 एक साइकिल चालक 2.5 km की दूरी 4 मिनट 10 सेकंड में तय करता है। उसी चाल से 6 km की दूरी तय करने में उसे कितना समय लगेगा?

- Ans A. 10 मिनट
 B. 9 मिनट
 C. 12 मिनट
 D. 11 मिनट

Question ID : 630680751093
 Status : Answered
 Chosen Option : A

Q.24 Find the collector current in all six transistors assuming $V_{BE} = 0.7 \text{ V}$, $\beta = \infty$.



- Ans A. 0.93 mA
 B. 9.3 μA
 C. 9.3 mA
 D. 0.9 mA

Question ID : 630680108747
 Status : Not Answered
 Chosen Option : --

Q.25 Which of the following is the working principle of a clamper circuit?

- Ans A. It works on the principle that the charging time of the capacitor is very small as compared to the discharging time.
 B. It works on the principle that the charging time of the capacitor is double as compared to the discharging time.
 C. It works on the principle that the charging time of the capacitor is large as compared to the discharging time.
 D. It works on the principle that the charging time of the capacitor is half as compared to the discharging time.

Question ID : 630680119943
 Status : Answered
 Chosen Option : A

Q.26 The polar plot of the transfer function $G(s) = \frac{1}{(1+sT_1)(1+sT_2)(1+sT_3)}$ intersects which of the following phase quadrants?

- Ans A. 180° and 270°
 B. -90° and -270°
 C. 0° and -180°
 D. 90° and -270°

Question ID : 630680139581
 Status : Answered
 Chosen Option : B

Q.27 Consider an angle modulated signal having frequency deviation $\Delta f = 75$ KHz and message signal bandwidth of 15 KHz. The bandwidth of angle modulated signal is:

- Ans** A. 180 KHz
 B. 30 KHz
 C. 90 KHz
 D. 150 KHz

Question ID : **630680146380**

Status : **Answered**

Chosen Option : **A**

Q.28 Read the given statements and conclusions carefully. Assuming that the information given in the statements is true, even if it appears to be at variance with commonly known facts, decide which of the given conclusions logically follow(s) from the statements.

Statements:

All trees are plants.
Some trees are grasses.
Some grasses are herbs.

Conclusions:

(I) Some plants are grasses.
(II) Some trees are herbs.

- Ans** A. Only conclusion II follows
 B. Only conclusion I follows
 C. Both conclusions I and II follow
 D. Neither conclusion I nor II follows

Question ID : **630680729647**

Status : **Answered**

Chosen Option : **B**