

AP Vidyut Recruitment Exam 23rd to 27th Aug 2026

Hall Ticket Number	
Participant Name	
Test Center Name	
Test Time	2:30 PM – 5:30 PM
Test Date	25/08/2026
Subject	Telecom Engineering

Section : General Intelligence and Reasoning

Q.1 Select the set in which the numbers are related in the same way as are the numbers of the following sets.

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding/deleting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

(5, 40, 7)
(12, 65, 5)

- Ans ☒ 1. (12, 123, 7)
☒ 2. (4, 32, 7)
☒ 3. (2, 7, 3)
☒ 4. (4, 45, 10)

Question ID : 441009586064
Chosen Option : 1

Q.2 Select the pair which follows the same pattern as that followed by the two pairs given below. Both pairs follow the same pattern.
GFJ : JIM
BST : EVW

- Ans ☒ 1. EHL : HKN
☒ 2. TEL : VHP
☒ 3. KBN : NEQ
☒ 4. DIG : GKJ

Question ID : 441009778872
Chosen Option : 4

Q.3 The position(s) of how many letters will remain unchanged if each of the letters in the word HANDIWORKS is arranged in the English alphabetical order?

- Ans ☒ 1. Two
☒ 2. Three
☒ 3. None
☒ 4. One

Question ID : 441009814649
Chosen Option : 4



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Q.4 Seven people, A, B, C, D, E, F and G are sitting in a row, facing north. Only two people sit between E and G. Only C sits to the right of F. Only one person sits between G and F. A sits at some place to the right of B but at some place to the left of D. How many people sit between B and D?

- Ans
- ☒ 1. 4
 - ☒ 2. 3
 - ☒ 3. 2
 - ☒ 4. 1

Question ID : 441009814186
Chosen Option : 4

Q.5 Which of the following letter-number clusters will replace the question mark (?) in the given series to make it logically complete?

CHR 1024, LQA 1156, UZJ 1296, ?, MRB 1600

- Ans
- ☒ 1. DIS 1424
 - ☒ 2. DIS 1444
 - ☒ 3. EJT 1444
 - ☒ 4. EJT 1424

Question ID : 4410097946
Chosen Option : 4

Section : General awareness

Q.6 Which feature is most characteristic of Nautanki, a traditional folk-theatre form popular in North India?

- Ans
- ☒ 1. Use of musical dialogues with singing and dancing
 - ☒ 2. Use of ritual performances with religious ceremonies
 - ☒ 3. Use of silent acting with mythological storytelling
 - ☒ 4. Use of shadow puppetry with dramatic visual effects

Question ID : 4410092199550
Chosen Option : 4

Q.7 Which of the following lakes in India is classified as a tectonic lake formed due to faulting and subsidence?

- Ans
- ☒ 1. Vembanad Lake
 - ☒ 2. Wular Lake
 - ☒ 3. Loktak Lake
 - ☒ 4. Chilika Lake

Question ID : 4410092258047
Chosen Option : 3

Q.8 With reference to India's Foreign Direct Investment (FDI) Policy, which of the following statements is INCORRECT?

- Ans
- ☒ 1. National Infrastructure Pipeline was formulated as part of India's strategy to attract foreign investment into infrastructure sectors.
 - ☒ 2. As on January 2026, 100% FDI in the Telecom Sector is allowed under the Automatic Route.
 - ☒ 3. Government of India reviews the FDI policies on an ongoing basis and makes significant changes from time to time.
 - ☒ 4. Government of India fixes monthly targets for FDI inflows as it is largely a matter of private business decisions.

Question ID : 4410091643783
Chosen Option : 3

Q.9 Which of the following was a major criticism of the Indian Councils Act of 1892 by nationalists?

- Ans
- ☒ 1. Abolished official majority
 - ☒ 2. Introduced dyarchy
 - ☒ 3. Denied voting on the budget
 - ☒ 4. Granted voting rights to Britishers

Question ID : 4410091629425
Chosen Option : 4

Q.10 What was the principal objective of the Government of India Act, 1858?

- Ans
- ☒ 1. Expansion of Company territorial powers
 - ☒ 2. Creation of provincial legislative councils
 - ☒ 3. Establishment of elected Indian ministries
 - ☒ 4. Transfer of rule to the British Crown

Question ID : 4410092115928
Chosen Option : 1

Q.11 Which of the following mountain ranges extends from Gujarat through Rajasthan to Delhi and contains the highest peak Gurushikhar?

- Ans
- ☒ 1. Western Ghats
 - ☒ 2. Satpura Hills
 - ☒ 3. Aravalli Hills
 - ☒ 4. Vindhya Range

Question ID : 4410092115998
Chosen Option : 1

Q.12 What type of vehicles was the launch of E85 fuel in June 2026 primarily intended to promote?

- Ans
- ☒ 1. Battery Electric Vehicles (BEVs)
 - ☒ 2. Flex-Fuel Vehicles (FFVs)
 - ☒ 3. Compressed Natural Gas (CNG) Vehicles
 - ☒ 4. Hydrogen Fuel Cell Vehicles (FCEVs)

Question ID : 441009150103
Chosen Option : 1

Comprehension:

Read the passage carefully and answer all the questions that follow.

Antimicrobial resistance has emerged as a major global health challenge because microorganisms are increasingly developing the ability to survive medicines designed to eliminate them. This situation can make common infections more difficult to treat and increase risks associated with medical procedures. Following recent multilateral commitments at the United Nations General Assembly High-Level Meeting on Antimicrobial Resistance, health organisations emphasise that addressing this threat requires responsible use of medicines, surveillance systems, and international cooperation. Unnecessary antibiotic use is considered a primary factor contributing to resistance. Researchers are working on new treatments, diagnostic methods, and prevention strategies to reduce its impact. Public awareness and healthcare practices also play vital roles. Effective action depends on balancing medical needs with careful management of treatments to protect future generations.

SubQuestion No : 13

Q.13 Which of the following facts is true according to the passage?

- Ans
- ☒ 1. Public health responses depend only on new medicines.
 - ☒ 2. Careful management of antibiotic treatments helps control resistance.
 - ☒ 3. Scientific discoveries have removed all treatment difficulties.
 - ☒ 4. Resistant organisms affect only uncommon medical conditions.

Question ID : 4410092412141
Chosen Option : 1

Comprehension:

Read the passage carefully and answer all the questions that follow.

Antimicrobial resistance has emerged as a major global health challenge because microorganisms are increasingly developing the ability to survive medicines designed to eliminate them. This situation can make common infections more difficult to treat and increase risks associated with medical procedures. Following recent multilateral commitments at the United Nations General Assembly High-Level Meeting on Antimicrobial Resistance, health organisations emphasise that addressing this threat requires responsible use of medicines, surveillance systems, and international cooperation. Unnecessary antibiotic use is considered a primary factor contributing to resistance. Researchers are working on new treatments, diagnostic methods, and prevention strategies to reduce its impact. Public awareness and healthcare practices also play vital roles. Effective action depends on balancing medical needs with careful management of treatments to protect future generations.

SubQuestion No : 14

Q.14 Select the best title that fits the passage.

- Ans
- ☒ 1. Expanding Healthcare Access through Digital Transformation
 - ☒ 2. Managing the Global Challenge of Antimicrobial Resistance
 - ☒ 3. Improving Hospital Facilities through Structural Development
 - ☒ 4. Designing Medical Instruments for Clinical Applications

Question ID : 4410092412140
Chosen Option : 2

Q.15 Choose the option that correctly expresses the given sentence in passive voice.

Lina did the homework inside the room.

- Ans
- ☒ 1. The homework was done inside the room by Lina.
 - ☒ 2. The homework has been done inside the room by Lina.
 - ☒ 3. The homework is being done inside the room by Lina.
 - ☒ 4. The homework had been done inside the room by Lina.

Question ID : 4410091302074
Chosen Option : 2

Q.16 Select the option that can be used as a one-word substitute for the underlined group of words.

The judge applied the statute strictly according to the original meaning of the text at the time it was written.

- Ans
- ☒ 1. proportionally
 - ☒ 2. teleologically
 - ☒ 3. textually
 - ☒ 4. discretionally

Question ID : 4410091713138
Chosen Option : 1

Q.17 Choose the most appropriate option to complete the sentence.
The novel provides deep insight _____ the psychology of migration, identity, and cultural displacement.

- Ans
- ☒ 1. about
 - ☒ 2. into
 - ☒ 3. around
 - ☒ 4. over

Question ID : 4410091548442
Chosen Option : 1

Section : Quantitative aptitude

Q.18 Three friends, P, Q and R, started a business by investing a sum of money in the ratio of 5 : 8 : 4. After 6 months, Q withdrew half of his capital. If the sum invested by P is ₹90000, out of a total annual profit of ₹52000 find the share of Q in profit.

- Ans
- ☒ 1. ₹19815
 - ☒ 2. ₹20230
 - ☒ 3. ₹22200
 - ☒ 4. ₹20800

Question ID : 441009548016
Chosen Option : 2

Q.19 The monthly incomes of two friends Vipul and Vijay, are in the ratio 6 : 8, and each of them saves ₹27000 every month. If the ratio of their monthly expenditures is 1 : 4, find the monthly income of Vipul (in ₹).

- Ans
- ☒ 1. 30375
 - ☒ 2. 42525
 - ☒ 3. 29375
 - ☒ 4. 31375

Question ID : 441009854147
Chosen Option : 2

Q.20 A hemispherical bowl has a radius of 7 cm. It is to be painted on both the inner and outer surfaces. Find the cost of painting it at the rate of ₹50 per 10 square centimeters.
(Use $\pi = \frac{22}{7}$)

- Ans
- ☒ 1. ₹3070
 - ☒ 2. ₹3080
 - ☒ 3. ₹3050
 - ☒ 4. ₹3060

Question ID : 4410091551595
Chosen Option : 1

Q.21 104 men have enough provisions for 12 weeks. If 52 additional men join them, for how many weeks will the provisions last?

- Ans
- ☒ 1. 8
 - ☒ 2. 10
 - ☒ 3. 6
 - ☒ 4. 12

Question ID : 441009522914
Chosen Option : 3

Q.22 A jeep travels 80 km at the speed of 56 km/h and the next 40 km at the speed of 14 km/h. What is its average speed (in km/h)?

- Ans
- ☒ 1. 28
 - ☒ 2. 34
 - ☒ 3. 22
 - ☒ 4. 32

Question ID : 441009542918
Chosen Option : 2

Q.23 Find the simple interest (in ₹) if a sum of ₹550 is borrowed for 7.5 years at 4% per annum rate of interest.

- Ans
- ☒ 1. 265
 - ☒ 2. 165
 - ☒ 3. 145
 - ☒ 4. 215

Question ID : 441009852049
Chosen Option : 1

Q.24 Evaluate: $24 \div (6 \times 4)$

- Ans
- ☒ 1. 3
 - ☒ 2. 1
 - ☒ 3. 4
 - ☒ 4. 2

Question ID : 441009521697
Chosen Option : 2

Q.25 What is the difference between the average of prime numbers between 80 and 90 and the average of multiples of 4 between 22 and 30?

- Ans
- ☐ 1. 64
 - ☐ 2. 61
 - ☐ 3. 63
 - ☒ 4. 60

Question ID : 441009580935
Chosen Option : 4

Section : Computer knowledge

Q.26 A manager wants to send a confidential project update to a team lead, while keeping the HR manager informed but without showing HR's address to others. Which field should the manager use for the HR manager's address?

- Ans
- ☐ 1. Reply All field
 - ☐ 2. CC field
 - ☐ 3. To field
 - ☒ 4. BCC field

Question ID : 4410092186326
Chosen Option : 2

Q.27 In a scenario where an Excel user wants to highlight the lowest sales figure from a list using functions, which function should be employed for this task?

- Ans
- ☐ 1. MAX
 - ☒ 2. MIN
 - ☐ 3. SUM
 - ☐ 4. AVERAGE

Question ID : 4410092272910
Chosen Option : 3

Q.28 Which of the following actions is necessary before performing a mail merge to send personalized letters in MS Word 2021?

- Ans
- ☐ 1. Inserting a company logo into the document
 - ☒ 2. Creating a data source with recipient information
 - ☐ 3. Typing a sample letter for the merge
 - ☐ 4. Formatting the main document for style

Question ID : 4410092307548
Chosen Option : 2

Q.29 What is the primary role of computers in scientific research laboratories?

- Ans
- ☐ 1. Operating social networking sites
 - ☐ 2. Processing automated teller machines
 - ☒ 3. Facilitating data collection and computational analysis
 - ☐ 4. Managing online shopping portals

Question ID : 4410092306917
Chosen Option : 3

Q.30 Which format is commonly used for clip art in MS PowerPoint 2016?

- Ans
- ☒ 1. PDF
 - ☒ 2. DOCX
 - ☒ 3. MP3
 - ☒ 4. PNG

Question ID : 4410092273137
Chosen Option : 2

Section : Telecom Engineering

Q.31 In a circuit loop, the voltage drops across three components are 5 V, 3 V, and 2 V. What is the value of the source voltage?

- Ans
- ☒ 1. 10 V
 - ☒ 2. 6 V
 - ☒ 3. 12 V
 - ☒ 4. 8 V

Question ID : 4410091626800
Chosen Option : 3

Q.32 If the frequency of an AC waveform is increased, how does this affect the duration of one cycle?

- Ans
- ☒ 1. The duration of one cycle decreases.
 - ☒ 2. The duration of one cycle increases.
 - ☒ 3. The duration of one cycle may increase or decrease
 - ☒ 4. The duration of one cycle remains unchanged.

Question ID : 4410091798025
Chosen Option : 4

Q.33 A designer wants to build a BJT amplifier with maximum immunity to temperature-induced leakage currents. Which biasing method and stability factor "S" value should be chosen?

- Ans
- ☒ 1. Fixed bias with S close to $\beta+1$
 - ☒ 2. Voltage divider bias with S close to 1
 - ☒ 3. Collector-to-base bias with S approaching infinity
 - ☒ 4. Fixed bias with S close to Infinity

Question ID : 4410091595432
Chosen Option : 4

Q.34 Which of the given statements are correct in the context of an asynchronous Ripple Up-Down counter?

- S1: It can count both in upward and downward directions.
S2: Only the MSB flip flop receives the external clock signal directly in a typical asynchronous ripple counter.
S3: An up-down counter is also called a bidirectional counter.

- Ans ☒ 1. Only S1 and S2
☒ 2. S1, S2 and S3
☒ 3. Only S2 and S3
☒ 4. Only S1 and S3

Question ID : 4410091537299
Chosen Option : 4

Q.35 A two-port network has transmission parameters [A, B; C, D] = [7, 4; 5, 3]. Which of the following statements is correct about this network?

- Ans ☒ 1. The network is only reciprocal.
☒ 2. The network is neither symmetric nor reciprocal.
☒ 3. The network is only symmetric.
☒ 4. The network is both symmetric and reciprocal.

Question ID : 4410091534077
Chosen Option : 4

Q.36 A 0–5 A ammeter has an internal resistance of 0.1 Ω. If a shunt resistance of 0.02 Ω is connected across the ammeter, the new range of ammeter will be _____.

- Ans ☒ 1. 15 A
☒ 2. 10 A
☒ 3. 30 A
☒ 4. 20 A

Question ID : 4410091793972
Chosen Option : 2

Q.37 What component is commonly used with the voltage divider to further stabilize the bias point?

- Ans ☒ 1. Load resistor
☒ 2. Emitter resistor
☒ 3. Base capacitor
☒ 4. Collector resistor

Question ID : 4410091595545
Chosen Option : 1

Q.38 Choose the in-correct statement.

A control system is classified as a linear system if
S1: It satisfies principle of additivity only
S2: it satisfies both principle of additivity and homogeneity.

- Ans
- ☒ 1. Neither S1 nor S2
 - ☒ 2. S2 only
 - ☒ 3. S1 only
 - ☒ 4. S1 and S2

Question ID : 4410091548848
Chosen Option : 1

Q.39 Choose the correct statement for the universal shift registers.
S1: In universal shift register input can be either in serial form or in parallel form.
S2: It is a bidirectional type register.
S3: Output of universal shift register is in serial form only.

- Ans
- ☒ 1. S1,S2 and S3
 - ☒ 2. S1 and S2 only
 - ☒ 3. S2 and S3 only
 - ☒ 4. S1 and S3 only

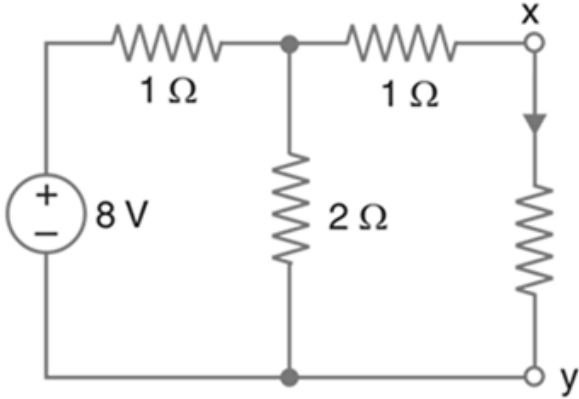
Question ID : 4410091550752
Chosen Option : 2

Q.40 In free space, a uniform plane wave has electric field:
 $E = 60\pi \cos(\omega t - 50x) a_y$ V/m
Determine the corresponding magnetic field intensity, **H**.

- Ans
- ☒ 1. $(1/2) \cos(\omega t - 50x) a_x$ A/m
 - ☒ 2. $(1/2) \cos(\omega t - 50x) a_z$ A/m
 - ☒ 3. $2 \cos(\omega t - 50x) a_z$ A/m
 - ☒ 4. $(1/2) \cos(\omega t - 50x) a_y$ A/m

Question ID : 4410091579975
Chosen Option : 4

Q.41 Determine the Norton equivalent circuit across terminals x-y for the given network.



- Ans
- ✗ 1. $R_N = 2/3 \Omega$, $I_{SC} = 8/3 A$
 - ✓ 2. $R_N = 5/3 \Omega$, $I_{SC} = 16/5 A$
 - ✗ 3. $R_N = 5/3 \Omega$, $I_{SC} = 8/3 A$
 - ✗ 4. $R_N = 4 \Omega$, $I_{SC} = 2 A$

Question ID : 4410091534080
Chosen Option : 4

Q.42 A series RLC circuit has quality factor ($Q = 20$) and resonant frequency ($f_0 = 2 \text{ kHz}$). Determine the approximate -3 dB frequencies.

- Ans
- ✗ 1. 1990 Hz and 2010 Hz
 - ✗ 2. 1500 Hz and 2500 Hz
 - ✗ 3. 1800 Hz and 2200 Hz
 - ✓ 4. 1950 Hz and 2050 Hz

Question ID : 4410091626821
Chosen Option : 2

Q.43 Consider $H(z) = \frac{1}{1 - \frac{1}{2}z^{-1}}$. For the causal realization, the ROC is ____

- Ans
- ✗ 1. $|z| < \frac{1}{2}$
 - ✓ 2. $|z| > \frac{1}{2}$
 - ✗ 3. entire z -plane
 - ✗ 4. $|z| = \frac{1}{2}$

Question ID : 4410091537186
Chosen Option : 2

Q.44 A Wien bridge oscillator is required to drive a high-impedance load with minimal loading effects. Which design change is most effective?

- Ans
- ☒ 1. Increase the feedback resistor
 - ☒ 2. Use a smaller capacitor in the bridge
 - ☒ 3. Buffer the output with a voltage follower stage
 - ☒ 4. Shorten the feedback path

Question ID : 4410091595378
Chosen Option : 4

Q.45 If the characteristics equation of the control system is $s^3 + 5s^2 + 6s + 5 = 0$, then which of the following options is correct?

- Ans
- ☒ 1. The system is unstable
 - ☒ 2. The system is marginal stable
 - ☒ 3. The system is stable
 - ☒ 4. System stability cannot be determined from the characteristics equation.

Question ID : 4410091550718
Chosen Option : 2

Q.46 Which one is the correct time domain equation of single tone frequency modulation?

- Ans
- ☒ 1. $s(t) = A \cos \omega_c t + K_f \int x(t) dt$ where K_f = Frequency sensitivity
 ω_c = Carrier frequency
 $x(t)$ = A baseband signal
 - ☒ 2. $s(t) = A \cos[\omega_c t + x(t) dt]$ where K_f = Frequency sensitivity
 ω_c = Carrier frequency
 $x(t)$ = A baseband signal
 - ☒ 3. $s(t) = A \cos[\omega_c t + K_f \int_0^t x(t) dt]$ where K_f = Frequency sensitivity
 ω_c = Carrier frequency
 $x(t)$ = A baseband signal
 - ☒ 4. $s(t) = A K_f \cos[\omega_c t + \int_0^t x(t) dt]$ where K_f = Frequency sensitivity
 ω_c = Carrier frequency
 $x(t)$ = A baseband signal

Question ID : 4410091577957
Chosen Option : 4

Q.47 A control system with characteristics equation $s^3 + as^2 + Ks + 3 = 0$ is stable when _____.

- Ans
- ☒ 1. $a > 0, aK < 3$
 - ☒ 2. $a > 0, aK > 3$
 - ☒ 3. $a < 0, aK > 3$
 - ☒ 4. $a < 0, aK < 3$

Question ID : 4410091537329
Chosen Option : 1

Q.48 A two-port has admittance parameters ($y_{11} = 5\text{ S}$), ($y_{12} = -1\text{ S}$), ($y_{21} = -1\text{ S}$), ($y_{22} = 2\text{ S}$). If port 2 is open-circuited, what is the input admittance seen looking into port 1?

- Ans
- ☒ 1. 4.5 S
 - ☐ 2. 6 S
 - ☐ 3. 2.5 S
 - ☐ 4. 5 S

Question ID : 4410091626827
Chosen Option : 3

Q.49 The equation of an alternating current is $i = 14.14 \sin 3.14t$. The fundamental time period of the current in seconds is _____.

- Ans
- ☐ 1. 0.5
 - ☐ 2. 20
 - ☐ 3. 0.2
 - ☒ 4. 2

Question ID : 4410091793541
Chosen Option : 3

Q.50 The electric field in a PN junction drops to zero at the depletion edges because _____

- Ans
- ☐ 1. Junction is zero
 - ☐ 2. Current is zero
 - ☒ 3. Charge density becomes zero outside
 - ☐ 4. Potential is maximum

Question ID : 4410091536268
Chosen Option : 3

Q.51 If 1101010 is a signed binary number in sign-magnitude form, then the decimal value is _____.

- Ans
- ☐ 1. 106
 - ☐ 2. -22
 - ☐ 3. -21
 - ☒ 4. -42

Question ID : 4410091536839
Chosen Option : 2

Q.52 A Hertzian (short) dipole in free space has length $d\ell = \lambda/(2\pi)$, where λ is the operating wavelength. Its radiation resistance R_r is closest to:

- Ans
- ☐ 1. 5 Ω
 - ☐ 2. 40 Ω
 - ☒ 3. 20 Ω
 - ☐ 4. 10 Ω

Question ID : 4410091579835
Chosen Option : 4

Q.53 Select the correct statements for the static RAM from among the following.

S1: Periodic refreshing is not required.
S2: It is volatile memory.
S3: Data access in SRAM is slower.

- Ans
- ☒ 1. Only S1 and S2
 - ☐ 2. Only S1 and S3
 - ☐ 3. Only S2 and S3
 - ☐ 4. All S1, S2 and S3

Question ID : 4410091537297
Chosen Option : 4

Q.54 Which of the following is an example of a balanced transmission line?

- Ans
- ☐ 1. Microstrip line
 - ☐ 2. Coaxial cable
 - ☒ 3. Two-wire parallel line
 - ☐ 4. Rectangular waveguide

Question ID : 4410091580137
Chosen Option : 3

Q.55 For a PN junction, the total charges on both sides of the junction are equal and opposite, maintaining neutrality while creating the _____ field that prevents further _____

- Ans
- ☐ 1. Magnetic , diffusion
 - ☒ 2. Electric, diffusion
 - ☐ 3. Electric , drift
 - ☐ 4. Magnetic , drift

Question ID : 4410091533921
Chosen Option : 4

Q.56 An isotropic radiator is a theoretical antenna that behaves as a source with which radiation property?

- Ans
- ☐ 1. Radiates with a specific polarization
 - ☐ 2. Radiates in a single direction
 - ☐ 3. Radiates with high directivity
 - ☒ 4. Radiates uniformly in all directions

Question ID : 4410091579818
Chosen Option : 4

Q.57 The pre-envelope can be used to reconstruct the original band pass signal by:

- Ans
- ☐ 1. Integrating the pre-envelope
 - ☐ 2. Differentiating the pre-envelope
 - ☒ 3. Taking the real part of the pre-envelope modulated at the carrier frequency
 - ☐ 4. Squaring the pre-envelope

Question ID : 4410091599351
Chosen Option : 3

Q.58 What is the approximate value of the **thermal voltage (V_T)** at room temperature $T = 300^\circ$?

- Ans
- ☒ 1. 26 mV
 - ☐ 2. 6 mV
 - ☐ 3. 36 mV
 - ☐ 4. 16 mV

Question ID : 4410091535735
Chosen Option : 4

Q.59 For a control system with input $R(t)$ and output $C(t)$, the transfer function of the control system is _____ where $R(s)$ and $C(s)$ are the Laplace transform of input and output respectively.

- Ans
- ☐ 1. $C(s)-R(S)$
 - ☐ 2. $R(s)/C(s)$ with initial condition zero
 - ☐ 3. $C(t)/R(t)$
 - ☒ 4. $C(s)/R(s)$ with initial condition zero

Question ID : 4410091548838
Chosen Option : 4

Q.60 In a hilly terrain, obstruction of radio (wireless) signals occurs mainly due to:

- Ans
- ☒ 1. Diffraction losses and shadow zones
 - ☐ 2. Convergence effect
 - ☐ 3. Relative humidity
 - ☐ 4. Lower population density

Question ID : 4410091836264
Chosen Option : 1

Q.61 A Zener diode biased at 5 mA with $10\ \Omega$ dynamic resistance is modeled in small-signal as _____

- Ans
- ☐ 1. An ideal diode in forward bias
 - ☐ 2. A current source in series with a $10\ \Omega$ resistor
 - ☐ 3. A capacitor in parallel with resistance
 - ☒ 4. A voltage source in series with a $10\ \Omega$ resistor

Question ID : 4410091547627
Chosen Option : 4

Q.62 Which of the following transformations will not affect the mutual information between two continuous random variables?

- Ans
- ☐ 1. Multiplying one variable by a random scalar
 - ☐ 2. Quantizing one variable
 - ☒ 3. Applying the same bijective transformation to both variables
 - ☐ 4. Adding independent noise to one variable

Question ID : 4410091601256
Chosen Option : 1

Q.63 A 5-bit DAC uses binary weighted resistor. If the resistance value of MSB is 48 K Ω , the value of resistance of LSB is.....

- Ans
- ☐ 1. 03 K Ω
 - ☐ 2. 1536 K Ω
 - ☐ 3. 1.5 K Ω
 - ☒ 4. 768 K Ω

Question ID : 4410091536873
Chosen Option : 4

Q.64 For a two-input, one output XOR gate, the output will be logic 1 if.....

- Ans
- ☐ 1. Both the inputs are at logic 1.
 - ☐ 2. Both the inputs are at logic 0.
 - ☐ 3. One input is low and other is undefined.
 - ☒ 4. The inputs are not equal.

Question ID : 4410091536879
Chosen Option : 3

Q.65 Given $x(t) = e^{-t} u(t)$, $h(t) = e^{-3t} u(t)$, compute the convolution: $(y(t) = x(t) * h(t))$.

- Ans
- ☐ 1. $e^{-t} u(t)$
 - ☐ 2. $t e^{-t} u(t)$
 - ☐ 3. $e^{-3t} u(t)$
 - ☒ 4. $\frac{1}{2}(e^{-t} - e^{-3t}) u(t)$

Question ID : 4410091626853
Chosen Option : 4

Q.66 A continuous-time signal $x(t)$ is time-scaled as $y(t) = x(0.5t)$. The energy of $y(t)$ compared to the energy of $x(t)$ is _____

- Ans
- ☐ 1. scaled by factor 0.5²
 - ☐ 2. halved
 - ☐ 3. unchanged
 - ☒ 4. doubled

Question ID : 4410091537204
Chosen Option : 1

Q.67 A signal $(x[n])$ satisfies $\sum_{n=-\infty}^{\infty} |x[n]|^2 < \infty$. This signal is _____

- Ans
- ☐ 1. neither energy nor power signal
 - ☒ 2. an energy signal
 - ☐ 3. both energy and power signal
 - ☐ 4. a power signal

Question ID : 4410091537201
Chosen Option : 3

Q.68 In AC equivalent circuit of common emitter amplifier, what is the input resistance value in base circuit?

- Ans
1. $R_{in} = R_{out}$
2. $R_{in} = \beta(r_c' + R_E)$ where β is current ratio.
 r_c' is ac resistance of collector-base junction.
 R_E is resistance at emitter terminal.
3. $R_{in} = \beta(r_e' + R_E)$ where β is current ratio.
 r_e' is ac resistance of emitter-base junction.
 R_E is resistance at emitter terminal.
4. $R_{in} = \beta r_e'$ where β is current ratio.
 r_e' is ac resistance of emitter-base junction.

Question ID : 4410091573841
Chosen Option : 1

Q.69 Which of the statements given below is false?

- Ans
1. The bandwidth of BFSK is twice the bandwidth of BPSK.
2. The bandwidth of BFSK signal is $4f_b$, where f_b is maximum baseband frequency.
3. The distance between signal point of BFSK is larger than BPSK.
4. The error probability of BFSK is higher than BPSK.

Question ID : 4410091580086
Chosen Option : 4

Q.70 A lossless transmission line of length ℓ has characteristic impedance $Z_o = 75 \Omega$ and is terminated in a load $Z_L = 75 \Omega$. At the source end ($z = 0$), the forward-travelling voltage wave is:
 $v(0,t) = 30 \cos(\omega t)$ V.
Determine the instantaneous current at the middle of the line, $i(\ell/2, t)$.

- Ans
1. $0.75 \cos(\omega t - \beta \ell/2)$ A
2. $0.4 \cos(\omega t - \beta \ell/2)$ A
3. $30 \cos(\omega t - \beta \ell/2)$ A
4. $0.4 \cos(\omega t + \beta \ell/2)$ A

Question ID : 4410091580113
Chosen Option : 1

Q.71 The linearity property of the Z-transform states that ____

- Ans
1. $Z\{f[n]g[n]\} = F(z)+G(z)$
2. $Z\{af[n]\} = F(z)/a$
3. $Z\{af[n] + bg[n]\} = aF(z) + bG(z)$
4. $Z\{f[n]+g[n]\} = F(z)G(z)$

Question ID : 4410091626842
Chosen Option : 3

Q.72 Which characteristic must the local oscillator match for effective coherent demodulation?

- Ans
- ☒ 1. Bandwidth of channel
 - ☐ 2. Frequency and phase of carrier
 - ☐ 3. Amplitude of message
 - ☐ 4. Phase of output

Question ID : 4410091596074
Chosen Option : 1

Q.73 A conducting circular loop of radius 0.2 m lies in the $z = 0$ plane. It is subjected to a time-varying magnetic field:
 $\mathbf{B} = 5 \cos(100t) \mathbf{a}_z$ mWb/m².
For a single-turn loop, determine the peak magnitude of the induced emf.

- Ans
- ☒ 1. 20π mV
 - ☐ 2. 80π mV
 - ☐ 3. 10π mV
 - ☐ 4. 40π mV

Question ID : 4410091579986
Chosen Option : 3

Q.74 A source follower has a 40 Ω output impedance. Given $g_m = 20$ mA/V, what source resistance is needed?

- Ans
- ☐ 1. 40 Ω
 - ☒ 2. 200 Ω
 - ☐ 3. 50 Ω
 - ☐ 4. 100 Ω

Question ID : 4410091548257
Chosen Option : 4

Q.75 In the diode small-signal model, the dynamic resistance represents _____

- Ans
- ☐ 1. Maximum forward resistance
 - ☐ 2. Resistance due to depletion region
 - ☒ 3. Slope of the I–V curve at Q-point
 - ☐ 4. Internal series resistance

Question ID : 4410091536227
Chosen Option : 4

Q.76 When evaluating foundation failure beneath telecom equipment, which of the following is the most likely cause if the soil bearing capacity was calculated incorrectly?

- Ans
- ☒ 1. Shear failure of soil
 - ☐ 2. Compression failure of soil
 - ☐ 3. Quick sand condition
 - ☐ 4. Compression failure of foundation

Question ID : 4410091794668
Chosen Option : 4

Q.77 As per IS 456-2000, The maximum area of compression reinforcement in a RCC beam of size 200mmx600 mm, shall NOT be greater than_____

- Ans
- ☒ 1. 6200 mm²
 - ☒ 2. 4800 mm²
 - ☒ 3. 5800 mm²
 - ☒ 4. 5200 mm²

Question ID : 4410091826447
Chosen Option : 3

Q.78 A sinusoidal voltage has RMS value 100 V. What is the peak to peak value of the voltage?

- Ans
- ☒ 1. 282.8 V
 - ☒ 2. 141.4 V
 - ☒ 3. 14.14 V
 - ☒ 4. 1.414 V

Question ID : 4410091793528
Chosen Option : 4

Q.79 Which mathematical term is present in DSB-LC time domain equation?

- Ans
- ☒ 1. Square of the message signal
 - ☒ 2. Difference of two carriers
 - ☒ 3. Sum of carrier and modulating terms
 - ☒ 4. Product of two noise signals

Question ID : 4410091596142
Chosen Option : 3

Q.80 In a PCM receiver, what is the primary function of the reconstruction filter?

- Ans
- ☒ 1. To quantize the signal
 - ☒ 2. To convert the pulse train back to an analog signal
 - ☒ 3. To sample the signal
 - ☒ 4. To encode the signal

Question ID : 4410091601198
Chosen Option : 1

Q.81 A standard block diagram contains forward-plant G=6 and a sensor gain H=0.5 feeding back negatively. Compute the closed-loop gain, if that block is cascaded to itself.

- Ans
- ☒ 1. 1.5
 - ☒ 2. 1.25
 - ☒ 3. 3.15
 - ☒ 4. 2.25

Question ID : 4410091536712
Chosen Option : 2

Q.82 A lossless transmission line has characteristic impedance $Z_0 = 60 \, \Omega$. Its physical length at a certain frequency is $l = 3\lambda/4$. The load at the far end is $Z_L = 15 \, \Omega$. What is the input impedance Z_{in} seen at the sending end?

- Ans
- ☒ 1. $60 \, \Omega$
 - ☒ 2. $15 \, \Omega$
 - ☒ 3. $240 \, \Omega$
 - ☒ 4. $80 \, \Omega$

Question ID : 4410091533964
Chosen Option : 3

Q.83 In most practical transformers, the low-voltage (LV) winding is placed closer to the core. What is the primary reason for this arrangement?

- Ans
- ☒ 1. LV winding has lower insulation requirement from the core
 - ☒ 2. LV winding has fewer turns
 - ☒ 3. LV winding carries less current
 - ☒ 4. LV winding produces less flux

Question ID : 4410091796457
Chosen Option : 1

Q.84 Which of the signal impairment in telecom system occurs if two telecom towers are placed such that their Fresnel zones overlap partially with terrain?

- Ans
- ☒ 1. Phase distribution and activation
 - ☒ 2. Phase distortion and attenuation
 - ☒ 3. Magnetostriction
 - ☒ 4. Supersonic sound generation

Question ID : 4410091836275
Chosen Option : 1

Q.85 For an LTI system, the input $x[n]$ is right-sided with ROC $|z| > 0.6$ and the impulse response $h[n]$ is right-sided with ROC $|z| > 0.4$. What is the ROC of the output $y[n] = x[n] * h[n]$?

- Ans
- ☒ 1. $|z| > 0.4$
 - ☒ 2. $|z| > 0.6$
 - ☒ 3. $0.4 < |z| < 0.6$
 - ☒ 4. $|z| > 1$

Question ID : 4410091534109
Chosen Option : 4

Q.86 A synchronous counter follows the state sequence $0 \rightarrow 1 \rightarrow 2 \rightarrow 5 \rightarrow 0$. The outputs must equal the binary value of the state, and all unused states transition to 0. What is the minimum number of D-flip-flops required?

- Ans
- ☒ 1. One
 - ☒ 2. Two
 - ☒ 3. Three
 - ☒ 4. Eight

Question ID : 4410091550759
Chosen Option : 3

Q.87 Choose the correct statement(s) about the hexadecimal number system.
S1: The hexadecimal equivalent of decimal number 227 is D3.
S2: The hexadecimal number system is a positional-weighted system.

- Ans
- ☒ 1. S2 only
 - ☐ 2. S1 and S2 both
 - ☐ 3. Neither S1 nor S2
 - ☐ 4. S1 only

Question ID : 4410091536834
Chosen Option : 3

Q.88 In a basic electronic oscillator, which process primarily enables the sustained oscillations?

- Ans
- ☐ 1. Rectification of AC signals
 - ☐ 2. Direct current amplification
 - ☐ 3. Dissipation of energy as heat
 - ☒ 4. Alternating conversion between electrical and magnetic energy

Question ID : 4410091586594
Chosen Option : 2

Q.89 In a parallel RLC circuit with $R = 2\ \Omega$, $L = 20\ \text{H}$, and $C = 5\ \text{F}$, what is the quality factor Q ?

- Ans
- ☐ 1. 2
 - ☐ 2. 4
 - ☒ 3. 1
 - ☐ 4. 10

Question ID : 4410091534068
Chosen Option : 2

Q.90 Which combination of components would result in the lowest frequency output from an RC phase shift oscillator?

- Ans
- ☐ 1. Low resistance, high capacitance
 - ☒ 2. High resistance, high capacitance
 - ☐ 3. High resistance, low capacitance
 - ☐ 4. Low resistance, low capacitance

Question ID : 4410091586662
Chosen Option : 1

Q.91 Which of the following parameters does NOT affect the fidelity of an envelope detector in AM demodulation?

- Ans
- ☐ 1. RC time constant
 - ☒ 2. Carrier amplitude for a fixed modulation index
 - ☐ 3. Modulation index
 - ☐ 4. Modulating frequency

Question ID : 4410091596392
Chosen Option : 3

Q.92 If the base of a PNP transistor were doped as heavily as the emitter, the transistor would _____

- Ans
- ✓ 1. Lose current gain
 - ✗ 2. Become a perfect switch
 - ✗ 3. Produce a higher β
 - ✗ 4. Work only in saturation

Question ID : 4410091547669
Chosen Option : 1

Q.93 Which type of lime is most suitable for structural masonry works requiring strength and durability?

- Ans
- ✗ 1. Quick lime
 - ✓ 2. Hydraulic lime
 - ✗ 3. Fat lime
 - ✗ 4. Non-hydraulic lime

Question ID : 4410091791217
Chosen Option : 2

Q.94 In the context of oscillators, what does the term 'unsustainable' imply about the output signal?

- Ans
- ✗ 1. The output signal remains sinusoidal forever
 - ✗ 2. The output signal doubles in amplitude
 - ✗ 3. The output signal becomes a steady DC
 - ✓ 4. The output signal eventually dies out

Question ID : 4410091586747
Chosen Option : 2

Q.95 Block diagram representation of the control system has two blocks in cascade with gains G1 and G2. The output is taken after G2. The correct SFG representation will have:

- Ans
- ✓ 1. Three nodes with branches having gains G1 and G2
 - ✗ 2. Two nodes only
 - ✗ 3. Three nodes and one branch with gain G1G2
 - ✗ 4. Four nodes only

Question ID : 4410091537328
Chosen Option : 1

Q.96 If $x[n] = (0.25)^n u[n]$, then Z-transform and ROC for $x[n]$ are _____

Ans

- ✗ 1. $\frac{1}{1 - 4z^{-1}}, |z| < 4$
- ✗ 2. $\frac{1}{1 - 0.25z^{-1}}, |z| < 0.25$
- ✓ 3. $\frac{1}{1 - 0.25z^{-1}}, |z| > 0.25$
- ✗ 4. $\frac{1}{1 - 4z^{-1}}, |z| > 4$

Question ID : 4410091537196
Chosen Option : 3

Q.97 If the base width of an NPN transistor is increased while keeping doping constant, the transistor will _____

Ans

- ✗ 1. Improve switching speed
- ✓ 2. Show reduced current gain
- ✗ 3. Reduce recombination
- ✗ 4. Increase collector breakdown current

Question ID : 4410091547686
Chosen Option : 4

Q.98 Which of the given statements is/are correct for the control system?

S1: When two or more blocks are connected in cascade, the overall transfer function can be determined by adding all the individual transfer function of the block.

S2: When two or more blocks are connected in parallel, the overall transfer function can be determined by multiplying all the individual transfer function of the block.

S3: When two or more inputs act on a linear control system, the total output is obtained by adding the effect of each individual input separately.

Ans

- ✗ 1. S1, S2 and S3
- ✗ 2. Only S1 and S3.
- ✓ 3. Only S3.
- ✗ 4. Only S2.

Question ID : 4410091537321
Chosen Option : 2

Q.99 A lossless transmission line has a characteristic impedance $Z_0 = 40 \Omega$. It is terminated with an unknown load. The magnitude of the reflection coefficient at the load is $\Gamma = 1/3$. As one moves toward the generator, determine the maximum value of the input impedance magnitude.

Ans

- ✓ 1. 80Ω
- ✗ 2. 40Ω
- ✗ 3. 60Ω
- ✗ 4. 30Ω

Question ID : 4410091580103
Chosen Option : 1

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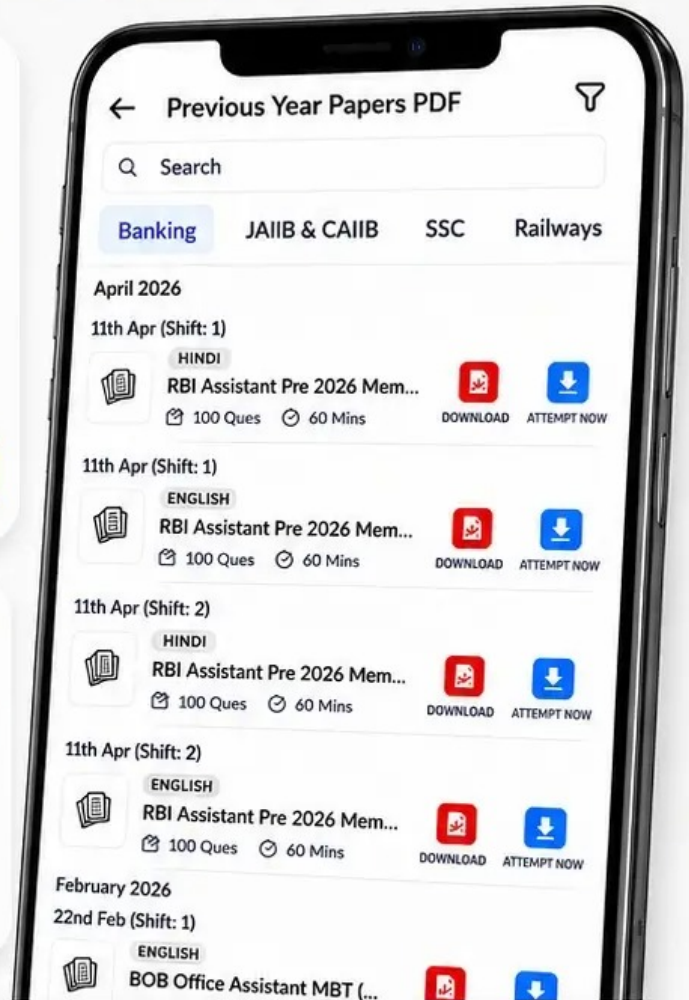
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Q.100 An ideal 10 A current source is connected in series with an ideal 5 V voltage source.
What is the equivalent source?

- Ans**
- ☒ 1. 10 A current source
 - ☐ 2. Impossible combination
 - ☐ 3. A current source of 10 A with 5 V internal voltage
 - ☐ 4. 5 V voltage source

Question ID : 4410091534065
Chosen Option : 4

