NHPC
JE

Previous Year Paper
(Electronics)
29 Oct, 2025 Shift 2

Participant ID	
Participant Name	
Test Center Name	
Test Date	29/10/2025
Test Time	2:00 PM - 5:00 PM
Subject	Junior Engineer Electronics and Communication

Section : **General Awareness**

Q.1 According to Economic Survey 2024-2025, what is the estimated growth of Real Gross Value Added (GVA) by Financial Year 2025?

Ans
✗ 1. 8.5%
✗ 2. 7.8%
✗ 3. 5.5%
✓ 4. 6.4%

Question ID : **44100989004**
Option 1 ID : **441009354006**
Option 2 ID : **441009354004**
Option 3 ID : **441009354005**
Option 4 ID : **441009354003**
Status : **Answered**
Chosen Option : **4**

Q.2 The tripartite struggle to control Kannauj involved which of the following major powers of the post-Gupta period?

Ans
✗ 1. The Palas, the Cholas, and the Pandyas
✗ 2. The Senas, the Tomaras, and the Chauhans
✓ 3. The Palas, the Gurjara-Pratiharas, and the Rashtrakutas
✗ 4. The Rashtrakutas, the Chalukyas, and the Pallavas

Question ID : **441009285537**
Option 1 ID : **4410091109242**
Option 2 ID : **4410091109245**
Option 3 ID : **4410091109244**
Option 4 ID : **4410091109243**
Status : **Answered**
Chosen Option : **3**

Q.3 Mangal Pandey attacked his officers at _____ during the First War of Independence.

Ans
✗ 1. Bulandsheher
✗ 2. Meerut
✓ 3. Barrackpore
✗ 4. Plassey

Question ID : **441009285546**
Option 1 ID : **4410091109280**
Option 2 ID : **4410091109278**
Option 3 ID : **4410091109279**
Option 4 ID : **4410091109281**
Status : **Answered**
Chosen Option : **2**

Q.4 The public bath or the granary are examples of great skills and advanced planning of construction at which sites of the Indus Valley Civilisation?

Ans
✓ 1. Mohenjodaro
✗ 2. Banawali
✗ 3. Lothal
✗ 4. Dholavira

Question ID : **44100978205**
Option 1 ID : **441009310821**
Option 2 ID : **441009310823**
Option 3 ID : **441009310820**
Option 4 ID : **441009310822**
Status : **Answered**
Chosen Option : **1**

Q.5 When was the 73rd Constitutional Amendment Act of the Indian Constitution passed by the Parliament?

Ans
✗ 1. 1974
✗ 2. 1994
✓ 3. 1992
✗ 4. 1973

Question ID : **441009285837**
Option 1 ID : **4410091110445**
Option 2 ID : **4410091110443**
Option 3 ID : **4410091110442**
Option 4 ID : **4410091110444**
Status : **Answered**
Chosen Option : **1**

Q.6 Dasavatara Vishnu temple is located at place from the following?

Ans
✗ 1. Surat
✗ 2. Khajuraho
✓ 3. Deogarh
✗ 4. Mahabalipuram

Question ID : **44100975516**
Option 1 ID : **441009300341**
Option 2 ID : **441009300340**
Option 3 ID : **441009300339**
Option 4 ID : **441009300338**
Status : **Answered**
Chosen Option : **2**

Q.7 **Balaghat-ChhindwaraNimar-Mandla and Jhabua districts of Madhya Pradesh are main producer of which resource?**

Ans
✗ 1. Iron ore
✗ 2. Petroleum
✗ 3. Coal
✓ 4. Manganese

Question ID : **44100977916**
Option 1 ID : **441009309667**
Option 2 ID : **441009309669**
Option 3 ID : **441009309668**
Option 4 ID : **441009309666**
Status : **Answered**
Chosen Option : **1**

Q.8 **Which Indian state ranked no. 1 in the Fiscal Health Index 2025, released by NITI Aayog in January 2025?**

Ans
✗ 1. Assam
✗ 2. Tamil Nadu
✓ 3. Odisha
✗ 4. Gujarat

Question ID : **44100993079**
Option 1 ID : **441009370006**
Option 2 ID : **441009370007**
Option 3 ID : **441009370005**
Option 4 ID : **441009370004**
Status : **Answered**
Chosen Option : **2**

Q.9 **Which Article of the Indian Constitution gives directives to the states for making policy to secure the operation of the economic system?**

Ans
✗ 1. Article 38
✗ 2. Article 41
✗ 3. Article 40
✓ 4. Article 39

Question ID : **441009285724**
Option 1 ID : **4410091109990**
Option 2 ID : **4410091109993**
Option 3 ID : **4410091109992**
Option 4 ID : **4410091109991**
Status : **Answered**
Chosen Option : **4**

Q.10 Who among the following was the first to describe the Revolt of 1857 as the 'First War of Indian Independence' and characterise it as a planned freedom struggle?

Ans
✗ 1. Jawaharlal Nehru
✓ 2. VD Savarkar
✗ 3. RC Majumdar
✗ 4. Bal Gangadhar Tilak

Question ID : **441009285555**
Option 1 ID : **4410091109317**
Option 2 ID : **4410091109316**
Option 3 ID : **4410091109315**
Option 4 ID : **4410091109314**
Status : **Answered**
Chosen Option : **2**

Q.11 In India, which agricultural practice was promoted during 1960s green revolution?

Ans
✗ 1. Decrease in fertiliser usage
✓ 2. Use of high yield variety seeds
✗ 3. Traditional farming methods
✗ 4. Organic farming

Question ID : **441009159351**
Option 1 ID : **441009632260**
Option 2 ID : **441009632261**
Option 3 ID : **441009632259**
Option 4 ID : **441009632262**
Status : **Answered**
Chosen Option : **2**

Q.12 According to the United Nations' World Economic Situation and Prospects Report, 2025, what is India's expected GDP growth rate for 2025?

Ans
✓ 1. 6.6%
✗ 2. 6.9%
✗ 3. 7.2%
✗ 4. 5.9%

Question ID : **44100989015**
Option 1 ID : **441009354056**
Option 2 ID : **441009354055**
Option 3 ID : **441009354057**
Option 4 ID : **441009354058**
Status : **Answered**
Chosen Option : **3**

Q.13 As of early 2025, which private Indian company is partnering with ISRO to manufacture the Polar Satellite Launch Vehicle (PSLV)?

Ans
✗ 1. Bharat Heavy Electricals Limited and Hindustan Aeronautics Limited

✗ 2. Defence Research and Development Organisation and Defense Institute of Psychological Research

✗ 3. Steel Authority of India Limited and Hindustan Aeronautics Limited

✓ 4. Hindustan Aeronautics Limited and Larsen & Toubro

Question ID : **44100993258**
Option 1 ID : **441009370742**
Option 2 ID : **441009370743**
Option 3 ID : **441009370744**
Option 4 ID : **441009370741**
Status : **Answered**
Chosen Option : **4**

Q.14 The IEARG Awards, 2025, were held on which significant day in India?

Ans
✗ 1. National Mathematics Day (22 December)

✗ 2. National Engineering Day (15 September)

✓ 3. National Science Day (28 February)

✗ 4. National Geographic Day (27 January)

Question ID : **44100989246**
Option 1 ID : **441009355129**
Option 2 ID : **441009355128**
Option 3 ID : **441009355127**
Option 4 ID : **441009355130**
Status : **Not Answered**
Chosen Option : **--**

Q.15 Which edition of Multinational Defense Exercise 'LA PEROUSE' was held in January 2025?

Ans
✗ 1. 4th Edition

✗ 2. 10th Edition

✓ 3. 5th Edition

✗ 4. 6th Edition

Question ID : **44100992882**
Option 1 ID : **441009369231**
Option 2 ID : **441009369229**
Option 3 ID : **441009369230**
Option 4 ID : **441009369232**
Status : **Not Answered**
Chosen Option : **--**

Q.16 During October and November, what is the cause of torrential rainfall over the Tamil Nadu coast, southern Andhra Pradesh, southeast Karnataka and southeast Kerala?

Ans
✗ 1. Winter monsoons
✗ 2. Southwest monsoon season
✗ 3. Hot weather season
✓ 4. Northeast monsoon

Question ID : **44100975600**
Option 1 ID : **441009300675**
Option 2 ID : **441009300677**
Option 3 ID : **441009300676**
Option 4 ID : **441009300674**
Status : **Answered**
Chosen Option : **4**

Q.17 Which Article of the Indian Constitution provides for the power, authority and responsibilities of Panchayats?

Ans
✓ 1. Article 243 G
✗ 2. Article 243 H
✗ 3. Article 243 D
✗ 4. Article 243 K

Question ID : **441009285894**
Option 1 ID : **4410091110672**
Option 2 ID : **4410091110670**
Option 3 ID : **4410091110671**
Option 4 ID : **4410091110673**
Status : **Not Answered**
Chosen Option : **--**

Q.18 Which of the following crops is cultivated in the highlands of the Western Ghats in Karnataka, Kerala and Tamil Nadu?

Ans
✗ 1. Bamboo
✓ 2. Coffee
✗ 3. Bajra
✗ 4. Wheat

Question ID : **44100977926**
Option 1 ID : **441009309706**
Option 2 ID : **441009309707**
Option 3 ID : **441009309709**
Option 4 ID : **441009309708**
Status : **Answered**
Chosen Option : **2**

Q.19 Which of the following biosphere reserves is located in Meghalaya?

Ans
✗ 1. Similipal
✗ 2. Sunderban
✗ 3. Kachchh
✓ 4. Nokrek

Question ID : **44100977914**
Option 1 ID : **441009309660**
Option 2 ID : **441009309659**
Option 3 ID : **441009309661**
Option 4 ID : **441009309658**
Status : **Answered**
Chosen Option : **3**

Q.20 During the national economic programme 1991, how many states of the country were selected under Special Rice Production Programme?

Ans
✗ 1. 23
✗ 2. 22
✗ 3. 25
✓ 4. 24

Question ID : **441009159476**
Option 1 ID : **441009632752**
Option 2 ID : **441009632751**
Option 3 ID : **441009632754**
Option 4 ID : **441009632753**
Status : **Answered**
Chosen Option : **2**

Q.21 Rahul Narwekar is the speaker of which state Legislative Assembly as of March 2025?

Ans
✗ 1. Haryana
✓ 2. Maharashtra
✗ 3. Gujarat
✗ 4. Assam

Question ID : **44100992931**
Option 1 ID : **441009369417**
Option 2 ID : **441009369418**
Option 3 ID : **441009369420**
Option 4 ID : **441009369419**
Status : **Answered**
Chosen Option : **2**

Q.22 How many Tigers Reserve are there in India as of December 2024?

Ans
✗ 1. 60
✗ 2. 51
✗ 3. 54
✓ 4. 57

Question ID : **44100989130**
Option 1 ID : **441009354623**
Option 2 ID : **441009354626**
Option 3 ID : **441009354624**
Option 4 ID : **441009354625**
Status : **Answered**
Chosen Option : **2**

Q.23 Which type of vascular bundles are present in monocotyledonous stems?

Ans
✓ 1. Conjoint and closed
✗ 2. Conjoint and open
✗ 3. Hadrocentric
✗ 4. Leptocentric

Question ID : **44100987881**
Option 1 ID : **441009349458**
Option 2 ID : **441009349457**
Option 3 ID : **441009349460**
Option 4 ID : **441009349459**
Status : **Not Answered**
Chosen Option : **--**

Q.24 Who among the following has been conferred with 'Polly Umrigar Best International Cricketer Award Men' in the BCCI Naman Awards, 2025?

Ans
✗ 1. Rohit Sharma
✗ 2. Sachin Tendulkar
✗ 3. Virat Kohli
✓ 4. Jasprit Bumrah

Question ID : **44100992735**
Option 1 ID : **441009368664**
Option 2 ID : **441009368661**
Option 3 ID : **441009368662**
Option 4 ID : **441009368663**
Status : **Answered**
Chosen Option : **4**

Q.25 How many disciplines has been included in the 2nd Khelo India Para games 2025?

Ans
✗ 1. Eight
✓ 2. Six
✗ 3. Ten
✗ 4. Five

Question ID : **44100992807**
Option 1 ID : **441009368938**
Option 2 ID : **441009368937**
Option 3 ID : **441009368940**
Option 4 ID : **441009368939**
Status : **Answered**
Chosen Option : **4**

Q.26 Which Articles of the Indian Constitution provide for the Fundamental Right against Exploitation?

Ans
✗ 1. Article 26 – Article 27
✗ 2. Article 24 – Article 25
✓ 3. Article 23 – Article 24
✗ 4. Article 22 – Article 23

Question ID : **441009285730**
Option 1 ID : **4410091110017**
Option 2 ID : **4410091110015**
Option 3 ID : **4410091110014**
Option 4 ID : **4410091110016**
Status : **Answered**
Chosen Option : **3**

Q.27 Which of the following newspapers was NOT associated with the Extremists during the freedom struggle of India?

Ans
✗ 1. Vande Mataram
✓ 2. Young India
✗ 3. Maratha
✗ 4. Kesari

Question ID : **441009285622**
Option 1 ID : **4410091109585**
Option 2 ID : **4410091109584**
Option 3 ID : **4410091109583**
Option 4 ID : **4410091109582**
Status : **Answered**
Chosen Option : **1**

Q.28 In 2025, which Political Leader was honoured (Posthumous) with the Padma Bhushan for their contributions to public affairs?

Ans
1. Arun Jaitley
2. Manmohan Singh
3. Sushil Kumar Modi
4. Arun Kumar Modi

Question ID : **44100989267**
Option 1 ID : **441009355204**
Option 2 ID : **441009355205**
Option 3 ID : **441009355203**
Option 4 ID : **441009355206**
Status : **Not Answered**
Chosen Option : **--**

Q.29 In India, who is responsible for formulating the Fiscal Policy?

Ans
1. Reserve Bank of India
2. National Bank for Agriculture and Rural Development
3. NITI Aayog
4. Ministry of Finance

Question ID : **441009159522**
Option 1 ID : **441009632904**
Option 2 ID : **441009632906**
Option 3 ID : **441009632907**
Option 4 ID : **441009632905**
Status : **Answered**
Chosen Option : **1**

Q.30 Which international company partnered with Indian firms Digantara and Bellatrix Aerospace in March 2025 to address space debris management?

Ans
1. SpaceX
2. Blue Origin
3. OneWeb
4. Astroscale

Question ID : **44100993200**
Option 1 ID : **441009370512**
Option 2 ID : **441009370510**
Option 3 ID : **441009370509**
Option 4 ID : **441009370511**
Status : **Answered**
Chosen Option : **4**

Section : **Reasoning**

Q.1 What should come in place of the question mark (?) in the given series?

878, 158, 38, ?, 8, 6

Ans
✔ 1. 14
✘ 2. 18
✘ 3. 16
✘ 4. 12

Question ID : **441009605263**
Option 1 ID : **4410092376172**
Option 2 ID : **4410092376170**
Option 3 ID : **4410092376171**
Option 4 ID : **4410092376169**
Status : **Answered**
Chosen Option : **2**

Q.2 Which of the following letter-number clusters will replace the question mark (?) in the given series to make it logically complete?

DY 24 , IB 37 , NE 50 , SH 63 , ?

Ans
✔ 1. XK 76
✘ 2. ZI 80
✘ 3. YE 70
✘ 4. YG 72

Question ID : **4410091313696**
Option 1 ID : **4410095186483**
Option 2 ID : **4410095186486**
Option 3 ID : **4410095186484**
Option 4 ID : **4410095186485**
Status : **Answered**
Chosen Option : **1**

Q.3 What should come in place of the question mark (?) in the given series based on the English alphabetical order?

HKG ILH JMI KNJ ?

Ans
✘ 1. LOJ
✔ 2. LOK
✘ 3. LPJ
✘ 4. LPK

Question ID : **441009754803**
Option 1 ID : **4410092973206**
Option 2 ID : **4410092973205**
Option 3 ID : **4410092973208**
Option 4 ID : **4410092973207**
Status : **Answered**
Chosen Option : **2**

Q.4 In a certain code language, 'phone is ringing' is coded as 'hy pt jt' and 'ringing the bell' is coded as 'pt nd cf'. How is 'ringing' coded in that language?

Ans
✗ 1. jt
✓ 2. pt
✗ 3. nd
✗ 4. hy

Question ID : **4410092990259**
Option 1 ID : **4410092990259**
Option 2 ID : **4410092990257**
Option 3 ID : **4410092990260**
Option 4 ID : **4410092990258**
Status : **Answered**
Chosen Option : **2**

Q.5 KINE is related to MMQK in a certain way based on the English alphabetical order. In the same way, SYZC is related to UCCI. To which of the following options is YKIU related, following the same logic?

Ans
✗ 1. OLAA
✗ 2. AALO
✓ 3. AOLA
✗ 4. ALOA

Question ID : **4410091313863**
Option 1 ID : **4410095187154**
Option 2 ID : **4410095187152**
Option 3 ID : **4410095187151**
Option 4 ID : **4410095187153**
Status : **Answered**
Chosen Option : **3**

Q.6 Seven boxes P, Q, R, S, T, U and V are kept one over the other but not necessarily in the same order. Only V is kept above T. Only two boxes are kept between T and U. Only S is kept below Q. R is not kept immediately above U. How many boxes are kept between Q and R?

Ans
✗ 1. 4
✓ 2. 2
✗ 3. 1
✗ 4. 3

Question ID : **4410091313934**
Option 1 ID : **4410095187438**
Option 2 ID : **4410095187436**
Option 3 ID : **4410095187435**
Option 4 ID : **4410095187437**
Status : **Answered**
Chosen Option : **4**

Q.7 Refer to the given number series and answer the question that follows. Counting to be done from left to right only. All numbers are single-digit numbers.

(Left) 4 7 2 5 6 1 9 3 8 7 4 2 7 5 6 3 8 1 4 9 2 6 3 5 7 8 3 4 9 2 1 6 (Right)

How many such odd digits are there, each of which is immediately preceded by an even digit and also immediately followed by an even digit?

Ans
1. Seven
2. Nine
3. Eight
4. Six

Question ID : **441009780869**
Option 1 ID : **4410093077482**
Option 2 ID : **4410093077479**
Option 3 ID : **4410093077481**
Option 4 ID : **4410093077480**
Status : **Answered**
Chosen Option : **2**

Q.8 Based on the English alphabetical order, three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which letter-cluster pair DOES NOT belong to that group?
(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

Ans
1. FO-JL
2. OX – SU
3. RA-VX
4. ME-RT

Question ID : **4410091313782**
Option 1 ID : **4410095186827**
Option 2 ID : **4410095186830**
Option 3 ID : **4410095186829**
Option 4 ID : **4410095186828**
Status : **Answered**
Chosen Option : **4**

Q.9 Select the pair that follows the same pattern as that followed by the two pairs given below. Both pairs follow the same pattern.

CSM : XNH
EKO : ZFJ

Ans
1. YEL : TJQ
2. YAR : DFM
3. HPN : CKI
4. TOM : OIR

Question ID : **441009787478**
Option 1 ID : **4410093103914**
Option 2 ID : **4410093103911**
Option 3 ID : **4410093103913**
Option 4 ID : **4410093103912**
Status : **Answered**
Chosen Option : **3**

Q.10 Refer to the given number and symbol series and answer the question that follows.
Counting to be done from left to right only. All numbers are single-digit numbers.

(Left) $ 2 7 9 $ 9 & 7 2 # 3 ^ * 7 3 4 3 $ 7 4 % 2 9 (Right)

If all the symbols are dropped, which is the seventh number from the left end in the new series?

Ans
✗ 1. 4
✗ 2. 1
✗ 3. 5
✓ 4. 3

Question ID : **441009771516**
Option 1 ID : **4410093040059**
Option 2 ID : **4410093040058**
Option 3 ID : **4410093040060**
Option 4 ID : **4410093040057**
Status : **Answered**
Chosen Option : **4**

Q.11 In a certain code language, 'building is tall' is coded as 'uj hr rp' and 'the tall boy' is coded as 'an tx hr'. How is 'tall' coded in that language?

Ans
✗ 1. an
✗ 2. uj
✗ 3. rp
✓ 4. hr

Question ID : **441009759067**
Option 1 ID : **4410092990264**
Option 2 ID : **4410092990262**
Option 3 ID : **4410092990263**
Option 4 ID : **4410092990261**
Status : **Answered**
Chosen Option : **4**

Q.12 Each of A, B, D, E, M, N and S has an interview on a different day of the week starting from Monday and ending on Sunday of the same week.
Only one person has an interview before N. Exactly three people have interviews between N and M. A has an interview immediately before S and B has an interview immediately after S. Only one person has an interview between A and E. How many people have interviews between E and D?

Ans
✗ 1. Two
✓ 2. Five
✗ 3. Three
✗ 4. Four

Question ID : **4410091313711**
Option 1 ID : **4410095186546**
Option 2 ID : **4410095186543**
Option 3 ID : **4410095186545**
Option 4 ID : **4410095186544**
Status : **Answered**
Chosen Option : **2**

Q.13 Each of E, F, G, I, K, L and M has an exam on a different day of the week starting from Monday and ending on Sunday of the same week. F has an exam on Thursday. K has an exam two days before F. Only four people have exams between G and K. L has an exam on one of the days after K. M has an exam on the day immediately before E. How many people have exams between E and L?

Ans
✗ 1. One
✓ 2. Two
✗ 3. Three
✗ 4. Four

Question ID : **4410091313650**
Option 1 ID : **4410095186299**
Option 2 ID : **4410095186300**
Option 3 ID : **4410095186301**
Option 4 ID : **4410095186302**
Status : **Answered**
Chosen Option : **1**

Q.14 A, B, C, D, E, F and G are sitting around a circular table facing the centre. A sits third to the left of E and to the immediate right of G. C sits second to the left of B. F sits third to the left of D. Which of the following pairs has the first person sitting to the immediate left of the second person?

Ans
✓ 1. DC
✗ 2. GB
✗ 3. EF
✗ 4. AB

Question ID : **441009755586**
Option 1 ID : **4410092976338**
Option 2 ID : **4410092976339**
Option 3 ID : **4410092976337**
Option 4 ID : **4410092976340**
Status : **Answered**
Chosen Option : **1**

Q.15 Refer to the given letter, number and symbol series and answer the question that follows. Counting to be done from left to right only. All numbers are single-digit numbers only.

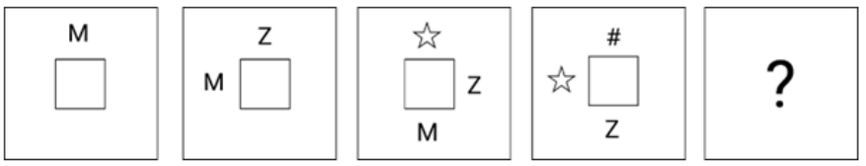
(Left) $ 2 J ≠ ℰ W 3 E ∋ ≧ R 5 E 3 # F 8 β 7 ≠ A 4 # 7 • C 6 β ≥ ¥ (Right)

How many such letters are there, which are immediately preceded by a number and also immediately followed by a symbol?

Ans
✗ 1. Three
✗ 2. One
✓ 3. Two
✗ 4. Four

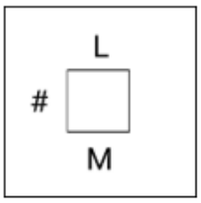
Question ID : **441009793436**
Option 1 ID : **4410093127745**
Option 2 ID : **4410093127743**
Option 3 ID : **4410093127744**
Option 4 ID : **4410093127746**
Status : **Answered**
Chosen Option : **3**

Q.16 Identify the figure given in the options which when put in place of the question mark (?) will logically complete the series.

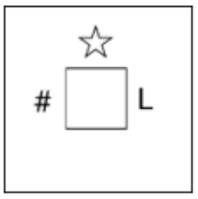


Ans

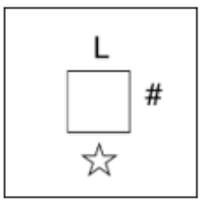
✗ 1.



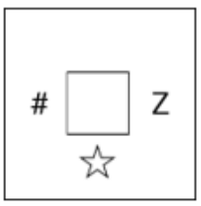
✗ 2.



✓ 3.



✗ 4.



Question ID : **4410092675738**
Option 1 ID : **4410092657094**
Option 2 ID : **4410092657096**
Option 3 ID : **4410092657095**
Option 4 ID : **4410092657093**
Status : **Answered**
Chosen Option : **3**

Q.17 Select the pair which follows the same pattern as that followed by the two set of pairs given below. Both pairs follow the same pattern.
OBS : MEN
JNR : HQM

Ans
✗ 1. KKF : INB
✗ 2. VHK : TJF
✓ 3. HFH : FIC
✗ 4. UIM : SMH

Question ID : **4410091313808**
Option 1 ID : **4410095186931**
Option 2 ID : **4410095186933**
Option 3 ID : **4410095186932**
Option 4 ID : **4410095186934**
Status : **Answered**
Chosen Option : **3**

Q.18 In a certain code language,

'A @ B' means 'A is the father of B',
'A + B' means 'A is the brother of B',
'A ! B' means 'A is the sister of B' and
'A x B' means 'A is the wife of B'.

How is G related to S if 'G @ A + T ! E x S'?

Ans
✔ 1. Wife's father
✘ 2. Wife's son
✘ 3. Wife's mother
✘ 4. Wife's daughter

Question ID : **4410091313821**
Option 1 ID : **4410095186983**
Option 2 ID : **4410095186985**
Option 3 ID : **4410095186984**
Option 4 ID : **4410095186986**
Status : **Answered**
Chosen Option : **1**

Q.19 In a certain code language,

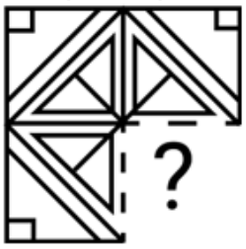
'A + B' means ' A is the son of B',
'A = B' means 'A is the wife of B',
'A x B' means 'A is the sister of B' and
'A : B' means 'A is the father of B'.

How is I related to T if 'I + N = S : E x T'?

Ans
✘ 1. Father
✘ 2. Sister
✘ 3. Mother
✔ 4. Brother

Question ID : **4410091313819**
Option 1 ID : **4410095186978**
Option 2 ID : **4410095186977**
Option 3 ID : **4410095186975**
Option 4 ID : **4410095186976**
Status : **Answered**
Chosen Option : **4**

Q.20 Select the option figure that will replace the question mark (?) in the figure given below to complete the pattern.



Ans

✗ 1. 

✗ 2. 

✓ 3. 

✗ 4. 

Question ID : **441009906408**
Option 1 ID : **4410093579442**
Option 2 ID : **4410093579440**
Option 3 ID : **4410093579443**
Option 4 ID : **4410093579441**
Status : **Answered**
Chosen Option : **3**

Q.21 Two sets of numbers are given below. In each set of numbers, certain mathematical operation(s) on the first number result(s) in the second number. Similarly, certain mathematical operation(s) on the second number result(s) in the third number and so on. Which of the given options follows the same set of operations as in the given sets? (Note: A two/three digit number cannot be broken into individual digits for operations, e.g., if 37 is followed by 10, the operation cannot be 3 + 7 as a two-digit number cannot be broken into individual digits.)
31 - 37 - 45 - 180
40 - 46 - 54 - 216

Ans
✓ 1. 40 - 46 - 54 - 216
✗ 2. 13 - 18 - 23 - 115
✗ 3. 4 - 10 - 15 - 60
✗ 4. 14 - 21 - 24 - 96

Question ID : **441009552767**
Option 1 ID : **4410092166382**
Option 2 ID : **4410092166384**
Option 3 ID : **4410092166385**
Option 4 ID : **4410092166383**
Status : **Answered**
Chosen Option : **1**

Q.22 If 'A' stands for '+', 'B' stands for '−', 'C' stands for '×' and 'D' stands for '÷', what will come in place of the question mark (?) in the following equation?

12 A 5 C 6 D 3 B 15 = ?

Ans
1. 3
2. 5
3. 9
4. 7

Question ID : **4410091312801**
Option 1 ID : **4410095182909**
Option 2 ID : **4410095182910**
Option 3 ID : **4410095182912**
Option 4 ID : **4410095182911**
Status : **Answered**
Chosen Option : **4**

Q.23 A, B, C, D, E, F and G are sitting around a circular table facing the centre. A sits to the immediate left to E. C sits to the immediate right of B and second to the left of D. F sits third to the right of D.
How many people sit between D and B when counted from the left of D?

Ans
1. 4
2. 2
3. 3
4. 1

Question ID : **441009755587**
Option 1 ID : **4410092976342**
Option 2 ID : **4410092976343**
Option 3 ID : **4410092976344**
Option 4 ID : **4410092976341**
Status : **Answered**
Chosen Option : **2**

Q.24 If 'I' stands for '+', 'J' stands for '×', 'K' stands for '÷' and 'L' stands for '−', then what will come in place of the question mark (?) in the following equation?

98 J 3 L 12 K 2 I 36 K 4 J 5 I 105 K 5 L 11 J 2 = ?

Ans
1. 332
2. 398
3. 452
4. 354

Question ID : **441009556417**
Option 1 ID : **4410092180982**
Option 2 ID : **4410092180984**
Option 3 ID : **4410092180985**
Option 4 ID : **4410092180983**
Status : **Answered**
Chosen Option : **1**

Q.25 32 is related to 165 following a certain logic. Following the same logic, 44 is related to 225. To which of the following is 50 related to, following the same logic?

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

Ans
✔ 1. 255
✘ 2. 240
✘ 3. 250
✘ 4. 245

Question ID : **4410091312704**
Option 1 ID : **4410095182524**
Option 2 ID : **4410095182521**
Option 3 ID : **4410095182523**
Option 4 ID : **4410095182522**
Status : **Answered**
Chosen Option : **1**

Q.26 If 'A' stands for '÷', 'B' stands for '×', 'C' stands for '+' and 'D' stands for '–', then what will come in place of the question mark (?) in the following equation?

29 C 27 A 3 D 12 B 3 = ?

Ans
✘ 1. 1
✘ 2. 3
✘ 3. 4
✔ 4. 2

Question ID : **441009551802**
Option 1 ID : **4410092162522**
Option 2 ID : **4410092162524**
Option 3 ID : **4410092162525**
Option 4 ID : **4410092162523**
Status : **Answered**
Chosen Option : **4**

Q.27 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster DOES NOT belong to that group?
(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

Ans
✘ 1. OFYU
✔ 2. LCUR
✘ 3. BSLH
✘ 4. RIBX

Question ID : **4410091313868**
Option 1 ID : **4410095187174**
Option 2 ID : **4410095187171**
Option 3 ID : **4410095187173**
Option 4 ID : **4410095187172**
Status : **Answered**
Chosen Option : **2**

Q.28 What should come in place of the question mark (?) in the given series?

1, 3, 6, 10, 15, ?, 28

Ans
✗ 1. 20
✓ 2. 21
✗ 3. 25
✗ 4. 27

Question ID : **4410091312771**
Option 1 ID : **4410095182789**
Option 2 ID : **4410095182791**
Option 3 ID : **4410095182790**
Option 4 ID : **4410095182792**
Status : **Answered**
Chosen Option : **2**

Q.29 Refer to the given letter series and answer the question that follows. Counting to be done from left to right only.

(Left) A B F K R E J I O U Y M Q S T W V H G P C (Right)

How many such consonants are there, each of which is immediately preceded by a vowel and also immediately followed by a vowel?

Ans
✓ 1. One
✗ 2. Two
✗ 3. Three
✗ 4. None

Question ID : **441009793057**
Option 1 ID : **4410093126228**
Option 2 ID : **4410093126229**
Option 3 ID : **4410093126230**
Option 4 ID : **4410093126227**
Status : **Answered**
Chosen Option : **2**

Q.30 Seven people, D, E, F, P, Q, W and X, are sitting in a row, facing north. Only two people sit between Q and E. Only D sits to the right of X. Only one person sits between E and X. F sits at some place to the right of P but at some place to the left of W. How many people sit between W and P?

Ans
✗ 1. Three
✗ 2. Four
✓ 3. Two
✗ 4. One

Question ID : **4410091313841**
Option 1 ID : **4410095187065**
Option 2 ID : **4410095187066**
Option 3 ID : **4410095187064**
Option 4 ID : **4410095187063**
Status : **Answered**
Chosen Option : **3**

Section : **Branch Specific (Electronics and Communication)**

Q.1 What is the recommended input voltage range for the Arduino Mega's V_{in} pin?

Ans
✗ 1. 5 V
✗ 2. 15-24 V
✗ 3. 3.3 V
✓ 4. 7-12 V

Question ID : **44100994992**
Option 1 ID : **441009377945**
Option 2 ID : **441009377947**
Option 3 ID : **441009377944**
Option 4 ID : **441009377946**
Status : **Answered**
Chosen Option : **4**

Q.2 Programmable Read only memory includes both AND array and OR array. Out of these two arrays, _____.

Ans
✗ 1. AND array is programmable and OR array is fixed
✓ 2. AND array is fixed and OR array is programmable
✗ 3. AND array is fixed and OR array is fixed
✗ 4. AND array is programmable and OR array is programmable

Question ID : **441009104379**
Option 1 ID : **441009415707**
Option 2 ID : **441009415705**
Option 3 ID : **441009415708**
Option 4 ID : **441009415706**
Status : **Answered**
Chosen Option : **2**

Q.3 How does ARM handle instruction execution to benefit from RISC design principles?

Ans
✗ 1. Decodes instructions in parallel and executes them serially
✗ 2. Offloads all memory operations to a secondary co-processor
✓ 3. Executes most instructions in a single clock cycle using a pipeline
✗ 4. Uses micro coded multi-cycle operations

Question ID : **441009167215**
Option 1 ID : **441009662012**
Option 2 ID : **441009662014**
Option 3 ID : **441009662013**
Option 4 ID : **441009662011**
Status : **Answered**
Chosen Option : **3**

Q.4 The raised cosine spectrum for pulse shaping is characterised by:

Ans
✗ 1. a frequency spectrum that spreads infinitely, requiring infinite bandwidth
✗ 2. a high-frequency signal with narrow bandwidth suitable for low-frequency transmission
✗ 3. a sharp cutoff at the Nyquist frequency, leading to wideband transmission
✓ 4. a smooth roll-off in the frequency domain that helps control the bandwidth of the signal

Question ID : **44100982671**
Option 1 ID : **441009328473**
Option 2 ID : **441009328474**
Option 3 ID : **441009328471**
Option 4 ID : **441009328472**
Status : **Answered**
Chosen Option : **4**

Q.5 **Which of the following best describes the primary purpose of the retransmission timer in TCP, and how is it dynamically adjusted to optimise performance?**

Ans
✗ 1. To ensure encryption timeout; it is fixed and based on the handshake duration

✗ 2. To prevent buffer overflow at the receiver; it is set based on application-layer throughput

✓ 3. To trigger retransmission of unacknowledged packets; it is adjusted using estimated RTT and deviation

✗ 4. To initiate flow control updates; it is dynamically adjusted based on packet size and TTL

Question ID : **441009922011**
Option 1 ID : **4410093642131**
Option 2 ID : **4410093642132**
Option 3 ID : **4410093642133**
Option 4 ID : **4410093642134**
Status : **Answered**
Chosen Option : **4**

Q.6 **Which type of sensors is commonly used for force measurement in industrial automation?**

Ans
✗ 1. Thermocouple

✗ 2. Linear Variable Differential Transformer (LVDT)

✗ 3. Resistance Temperature Detector (RTD)

✓ 4. Load cell

Question ID : **441009123362**
Option 1 ID : **441009490348**
Option 2 ID : **441009490350**
Option 3 ID : **441009490351**
Option 4 ID : **441009490349**
Status : **Answered**
Chosen Option : **2**

Q.7 **Identify the INCORRECT statement related to Plasma TV.**

Ans
✓ 1. Plasma TVs require a backlight.

✗ 2. Plasma TVs are generally bulkier and heavier than LCD TVs

✗ 3. Plasma TVs offer a wider viewing angle.

✗ 4. Plasma TVs offer very good colour reproduction.

Question ID : **441009116458**
Option 1 ID : **441009463252**
Option 2 ID : **441009463253**
Option 3 ID : **441009463251**
Option 4 ID : **441009463254**
Status : **Answered**
Chosen Option : **4**

Q.8 If the Arduino Mega is powered through the Vin pin with a 12V supply and the onboard regulator drops 7V (from 12V to 5V), how much power (in watts) is dissipated as heat by the voltage regulator if the current drawn by the Arduino Mega is 200mA?

Ans
✗ 1. 1.6W
✓ 2. 1.4W
✗ 3. 0.7W
✗ 4. 2.4W

Question ID : **441009113754**
Option 1 ID : **441009452501**
Option 2 ID : **441009452499**
Option 3 ID : **441009452498**
Option 4 ID : **441009452500**
Status : **Answered**
Chosen Option : **2**

Q.9 In Pulse Code Modulation (PCM), which of the following steps is responsible for encoding the continuous analog signal into a digital signal?

Ans
✗ 1. Decoder
✓ 2. Quantisation
✗ 3. Sampling
✗ 4. Encoder

Question ID : **44100997905**
Option 1 ID : **441009389684**
Option 2 ID : **441009389682**
Option 3 ID : **441009389681**
Option 4 ID : **441009389683**
Status : **Answered**
Chosen Option : **2**

Q.10 An electrical circuit comprises of three resistor each of 6 kΩ connected in parallel combination. That combination is then connected in series to a parallel combination of three capacitors having values, 7 μF, 8 μF and 5μF. What is the time constant (τ) of this circuit?

Ans
✗ 1. 100 ms
✓ 2. 40 ms
✗ 3. 400 ms
✗ 4. 4 ms

Question ID : **441009113570**
Option 1 ID : **441009451780**
Option 2 ID : **441009451778**
Option 3 ID : **441009451781**
Option 4 ID : **441009451779**
Status : **Answered**
Chosen Option : **1**

Q.11 Which type of feedback increases the bandwidth and input impedance of an amplifier?

Ans
✗ 1. Voltage-shunt negative feedback
✗ 2. Voltage-shunt positive feedback
✗ 3. Voltage-series positive feedback
✓ 4. Voltage-series negative feedback

Question ID : **441009133420**
Option 1 ID : **441009530472**
Option 2 ID : **441009530473**
Option 3 ID : **441009530471**
Option 4 ID : **441009530470**
Status : **Answered**
Chosen Option : **4**

Q.12 In combinational logic design for designing 2:1 mux, _____ select line(s) are needed.

Ans
✗ 1. 0
✗ 2. 2
✓ 3. 1
✗ 4. 4

Question ID : **441009103810**
Option 1 ID : **441009413447**
Option 2 ID : **441009413446**
Option 3 ID : **441009413445**
Option 4 ID : **441009413448**
Status : **Answered**
Chosen Option : **3**

Q.13 What is the result of the binary subtraction $(1101)_2-(101)_2$?

Ans
✗ 1. 01102
✗ 2. 10102
✓ 3. 10002
✗ 4. 00102

Question ID : **441009164123**
Option 1 ID : **441009650113**
Option 2 ID : **441009650114**
Option 3 ID : **441009650115**
Option 4 ID : **441009650116**
Status : **Answered**
Chosen Option : **3**

Q.14 What does Peak Inverse Voltage (PIV) of a diode in a rectifier circuit represent?

Ans
✓ 1. PIV is the maximum reverse peak voltage a diode can withstand without breakdown.
✗ 2. PIV is the maximum forward peak voltage a diode can withstand without breakdown.
✗ 3. PIV is the maximum reverse average voltage a diode can withstand without breakdown.
✗ 4. PIV is the maximum reverse AC voltage a diode can withstand without breakdown.

Question ID : **441009133947**
Option 1 ID : **441009532464**
Option 2 ID : **441009532463**
Option 3 ID : **441009532461**
Option 4 ID : **441009532462**
Status : **Answered**
Chosen Option : **1**

Q.15 What is the expression of Gage Factor (K) for metallic strain gage in te

Ans
✔ 1. $1+2\mu$
✗ 2. $2+\mu$
✗ 3. $2-\mu$
✗ 4. $1-2\mu$

Question ID : **441009111584**
Option 1 ID : **441009443885**
Option 2 ID : **441009443887**
Option 3 ID : **441009443888**
Option 4 ID : **441009443886**
Status : **Not Answered**
Chosen Option : **--**

Q.16 Which of the following statements is INCORRECT when impurity atoms are added to a pure semiconductor?

Ans
✗ 1. The donor energy level is a discrete level located just below the conduction band.
✗ 2. The main effect of adding acceptor impurities to a semiconductor is the creation of holes.
✔ 3. At 0 K, some free electrons are present in the conduction band of an N-type semiconductor.
✗ 4. When a donor impurity in added to a semiconductor, the number of free electrons increases.

Question ID : **441009135515**
Option 1 ID : **441009538579**
Option 2 ID : **441009538578**
Option 3 ID : **441009538580**
Option 4 ID : **441009538577**
Status : **Answered**
Chosen Option : **1**

Q.17 In Mobile IP, what is the role of the Foreign Agent (FA)?

Ans
✗ 1. Assigns a new permanent IP address to the mobile node
✗ 2. Maintains routing tables for the entire internet
✔ 3. Forwards packets to the mobile node when it is away from its home network
✗ 4. Encrypts all mobile node communications for secure transmission

Question ID : **441009922279**
Option 1 ID : **4410093643188**
Option 2 ID : **4410093643191**
Option 3 ID : **4410093643189**
Option 4 ID : **4410093643190**
Status : **Answered**
Chosen Option : **3**

Q.18 In a digital communication system, what is the main function of the 'Channel' block?

Ans
✗ 1. To decode the received signal
✓ 2. To transmit the signal from the transmitter to the receiver
✗ 3. To convert the signal from analog to digital
✗ 4. To encode the message signal

Question ID : **44100983775**
Option 1 ID : **441009332843**
Option 2 ID : **441009332842**
Option 3 ID : **441009332841**
Option 4 ID : **441009332840**
Status : **Answered**
Chosen Option : **2**

Q.19 What is the primary advantage of using hydraulic control systems over pneumatic control systems in industrial applications?

Ans
✓ 1. Ability to generate higher force and power
✗ 2. Lower system complexity
✗ 3. Higher energy efficiency
✗ 4. Faster response time

Question ID : **441009123481**
Option 1 ID : **441009490829**
Option 2 ID : **441009490830**
Option 3 ID : **441009490827**
Option 4 ID : **441009490828**
Status : **Answered**
Chosen Option : **1**

Q.20 In Delta Modulation (DM), which of the following is the main disadvantage of granular error?

Ans
✗ 1. It occurs only when the signal is transmitted with a high sampling rate.
✓ 2. It causes significant distortion in the reconstructed signal.
✗ 3. It results in a high bit rate requirement.
✗ 4. It introduces a significant amount of noise in the system.

Question ID : **44100982691**
Option 1 ID : **441009328553**
Option 2 ID : **441009328552**
Option 3 ID : **441009328551**
Option 4 ID : **441009328554**
Status : **Answered**
Chosen Option : **2**

Q.21 Which instruction toggles the state of an LED connected to P2.5?

Ans
✗ 1. CLR P2.5
✓ 2. CPL P2.5
✗ 3. MOV P2.5, #1
✗ 4. SETB P2.5

Question ID : **441009167319**
Option 1 ID : **441009662420**
Option 2 ID : **441009662421**
Option 3 ID : **441009662422**
Option 4 ID : **441009662419**
Status : **Not Answered**
Chosen Option : **--**

Q.22 Which of the following is a primary advantage of using Linear Block Codes in digital communication systems?

Ans
✗ 1. They simplify the decoding process by using non-linear combinations.
✗ 2. They provide higher data rates by reducing the number of transmitted bits.
✓ 3. They allow for efficient error detection and correction using the Hamming distance.
✗ 4. They require no additional parity bits for error correction.

Question ID : **441009100772**
Option 1 ID : **441009401083**
Option 2 ID : **441009401082**
Option 3 ID : **441009401084**
Option 4 ID : **441009401085**
Status : **Answered**
Chosen Option : **3**

Q.23 Which of the following is a congestion control algorithm used in TCP to avoid network congestion?

Ans
✗ 1. Sliding Window Protocol
✓ 2. Token Ring
✗ 3. Stop-and-Wait Protocol
✗ 4. Slow Start

Question ID : **441009909354**
Option 1 ID : **4410093591277**
Option 2 ID : **4410093591280**
Option 3 ID : **4410093591278**
Option 4 ID : **4410093591279**
Status : **Answered**
Chosen Option : **3**

Q.24 LM380 Op-amp is a _____.

Ans
✗ 1. General purpose IC
✗ 2. Optocoupler
✓ 3. Special purpose op-amp
✗ 4. Hybrid IC

Question ID : **441009116450**
Option 1 ID : **441009463219**
Option 2 ID : **441009463221**
Option 3 ID : **441009463220**
Option 4 ID : **441009463222**
Status : **Not Answered**
Chosen Option : **--**

Q.25 An industrial system uses both RS232 and RS485 communication protocols. The RS232 interface operates at a baud rate of 9600, with 1 start bit, 8 data bits, 1 stop bit and no parity. The RS485 interface operates at a baud rate of 4800, with 1 start bit, 8 data bits, 1 stop bit and even parity. If the system sends a 10-byte message simultaneously over both interfaces, calculate the total time taken to transmit the message over each interface and determine which protocol completes the transmission faster.
Given:
RS232 baud rate = 9600 bps
RS485 baud rate = 4800 bps
Both protocols use 1 start bit, 8 data bits, and 1 stop bit.
RS485 adds 1 parity bit.

Ans
✔ 1. RS232: 10.42 ms, RS485: 22.92 ms; RS232 is faster
✘ 2. RS232: 12.50 ms, RS485: 22.92 ms; RS232 is faster
✘ 3. RS232: 10.42 ms, RS485: 20.83 ms; RS232 is faster
✘ 4. RS232: 12.50 ms, RS485: 20.83 ms; RS232 is faster

Question ID : **441009113827**
Option 1 ID : **441009452786**
Option 2 ID : **441009452788**
Option 3 ID : **441009452787**
Option 4 ID : **441009452789**
Status : **Not Answered**
Chosen Option : **--**

Q.26 To overcome the practical difficulties encountered with ideal Nyquist channel, which parameter affects the pulse shape by indicating the excess bandwidth over the ideal solution?

Ans
✘ 1. Impulse response of channel
✘ 2. Decision threshold
✔ 3. Roll off factor
✘ 4. Sampling time

Question ID : **441009117002**
Option 1 ID : **441009465134**
Option 2 ID : **441009465137**
Option 3 ID : **441009465135**
Option 4 ID : **441009465136**
Status : **Answered**
Chosen Option : **4**

Q.27 Which of the following methods can be used to mitigate inter-symbol interference (ISI) in a digital communication system?

Ans
✔ 1. Applying a matched filter at the receiver
✘ 2. Using a higher modulation order
✘ 3. Decreasing the bandwidth of the transmission signal
✘ 4. Increasing the signal-to-noise ratio (SNR)

Question ID : **44100982649**
Option 1 ID : **441009328385**
Option 2 ID : **441009328384**
Option 3 ID : **441009328386**
Option 4 ID : **441009328383**
Status : **Answered**
Chosen Option : **4**

Q.28 The line code adopted as North American standard for digital subscriber line(DSL) is:

Ans
✗ 1. Bipolar Code
✗ 2. Modified Duobinary Code
✗ 3. Manchester Code
✓ 4. 2B1Q Code

Question ID : **441009108893**
Option 1 ID : **441009433387**
Option 2 ID : **441009433386**
Option 3 ID : **441009433385**
Option 4 ID : **441009433388**
Status : **Answered**
Chosen Option : **3**

Q.29 If the bitwise XOR of two numbers x and y is z, what is the XOR of x, y and z?

Ans
✗ 1. y
✓ 2. 0
✗ 3. z
✗ 4. x

Question ID : **441009117523**
Option 1 ID : **441009467275**
Option 2 ID : **441009467274**
Option 3 ID : **441009467276**
Option 4 ID : **441009467273**
Status : **Answered**
Chosen Option : **2**

Q.30 The NTSC standard in Television supports _____ scan lines and an aspect ratio of _____.

Ans
✗ 1. 625; 4:3
✓ 2. 525; 4:3
✗ 3. 625; 3:4
✗ 4. 525; 3:4

Question ID : **441009116369**
Option 1 ID : **441009462901**
Option 2 ID : **441009462900**
Option 3 ID : **441009462903**
Option 4 ID : **441009462902**
Status : **Answered**
Chosen Option : **2**

Q.31 The primary advantage of microstrip patch antennas is:

Ans
✗ 1. high power handling
✓ 2. compact and lightweight design
✗ 3. high gain
✗ 4. large bandwidth

Question ID : **441009116527**
Option 1 ID : **441009463519**
Option 2 ID : **441009463520**
Option 3 ID : **441009463522**
Option 4 ID : **441009463521**
Status : **Answered**
Chosen Option : **2**

Q.32 The TE_{mn} mode means that the:

Ans ✔ 1. electric field has m half-wavelength variations along the broad dimension and n half-wavelength variations along the narrow dimension

✘ 2. waveguide is operating at the lowest possible frequency

✘ 3. magnetic field has m variations along the broad side and n variations along the narrow side

✘ 4. wave propagates in the transverse direction

Question ID : **441009116250**
Option 1 ID : **441009462436**
Option 2 ID : **441009462439**
Option 3 ID : **441009462437**
Option 4 ID : **441009462438**
Status : **Answered**
Chosen Option : **1**

Q.33 Dynamic source routing (DSR) protocol is composed of two main mechanisms, namely:

Ans ✔ 1. route discovery and route maintenance

✘ 2. classful and classless addressing

✘ 3. error detection and error correction

✘ 4. connectionless and connection-oriented packet switching

Question ID : **441009187570**
Option 1 ID : **441009740762**
Option 2 ID : **441009740763**
Option 3 ID : **441009740761**
Option 4 ID : **441009740764**
Status : **Answered**
Chosen Option : **1**

Q.34 Identify the correct statement related to flicker in television engineering.

Ans ✘ 1. Flicker and Blanking rate are independent of each other.

✔ 2. As the blanking rate increases, the flicker decreases.

✘ 3. As the blanking rate increases, the flicker increases.

✘ 4. As the blanking rate decreases, the flicker decreases.

Question ID : **441009116400**
Option 1 ID : **441009463022**
Option 2 ID : **441009463019**
Option 3 ID : **441009463020**
Option 4 ID : **441009463021**
Status : **Not Answered**
Chosen Option : **--**

Q.35 Which of the following statements is true for spread spectrum technique FHSS using M-ary frequency shift keying (MFSK)?

Ans
✔ 1. Hop rate is an integer multiple of symbol rate in fast frequency hopping and symbol rate is an integer multiple of hop rate in slow frequency hopping.
✘ 2. Symbol rate and hop rate are same in fast frequency hopping.
✘ 3. Symbol rate and hop rate are same in slow frequency hopping.
✘ 4. Symbol rate is an integer multiple of hop rate in fast frequency hopping and hop rate is an integer multiple of symbol rate in slow frequency hopping.

Question ID : **441009130845**
Option 1 ID : **441009519874**
Option 2 ID : **441009519876**
Option 3 ID : **441009519875**
Option 4 ID : **441009519873**
Status : **Answered**
Chosen Option : **1**

Q.36 What does ARM stand for in the context of microcontrollers?

Ans
✔ 1. Advanced RISC Machine
✘ 2. Advanced Register Mapping
✘ 3. Arithmetic RISC Microchip
✘ 4. Advanced Reduced Machine

Question ID : **441009167198**
Option 1 ID : **441009661945**
Option 2 ID : **441009661946**
Option 3 ID : **441009661944**
Option 4 ID : **441009661943**
Status : **Answered**
Chosen Option : **1**

Q.37 A 1-to-8 demultiplexer can be constructed using smaller demultiplexers. How many 1-to-2 demultiplexers would be required to implement a single 1-to-8 demultiplexer?

Ans
✘ 1. THREE
✘ 2. FOUR
✘ 3. EIGHT
✔ 4. SEVEN

Question ID : **441009164175**
Option 1 ID : **441009650317**
Option 2 ID : **441009650318**
Option 3 ID : **441009650320**
Option 4 ID : **441009650319**
Status : **Answered**
Chosen Option : **3**

Q.38 In a circuit, the source has a voltage of V_s = 10V and an internal resistance R_s = 5Ω. A load resistor R_L is connected across the source. What is the value of R_L that will result in maximum power delivered to the load resistor?

Ans
✗ 1. RL = 50 Ω
✗ 2. RL = 10 Ω
✗ 3. RL = 0.5 Ω
✓ 4. RL = 5 Ω

Question ID : **441009104859**
Option 1 ID : **441009417635**
Option 2 ID : **441009417637**
Option 3 ID : **441009417636**
Option 4 ID : **441009417634**
Status : **Answered**
Chosen Option : **4**

Q.39 S-parameters are used to describe the:

Ans
✓ 1. behaviour of electrical networks in the frequency domain
✗ 2. mechanical properties of waveguides
✗ 3. power dissipation of resistors
✗ 4. time-domain response of a system

Question ID : **441009116441**
Option 1 ID : **441009463185**
Option 2 ID : **441009463186**
Option 3 ID : **441009463184**
Option 4 ID : **441009463183**
Status : **Answered**
Chosen Option : **1**

Q.40 What is the maximum data transfer rate of USB 2.0?

Ans
✗ 1. 12 Mbps
✗ 2. 5 Gbps
✓ 3. 480 Mbps
✗ 4. 20 Gbps

Question ID : **441009113855**
Option 1 ID : **441009452898**
Option 2 ID : **441009452900**
Option 3 ID : **441009452899**
Option 4 ID : **441009452901**
Status : **Answered**
Chosen Option : **1**

Q.41 In Quadrature Amplitude Modulation (QAM), how are the transmitted symbols typically represented in a geometric diagram?

Ans
✗ 1. As points along the real axis
✗ 2. As points on a unit circle
✗ 3. As sequences of pulses along the time axis
✓ 4. As points in a two-dimensional constellation diagram

Question ID : **441009100037**
Option 1 ID : **441009398096**
Option 2 ID : **441009398097**
Option 3 ID : **441009398099**
Option 4 ID : **441009398098**
Status : **Answered**
Chosen Option : **3**

Q.42 Diversity combining in antenna constitutes a combination of power of all signals to produce _____.

Ans
✗ 1. interference
✗ 2. fading
✗ 3. ripples
✓ 4. gain

Question ID : **441009118194**
Option 1 ID : **441009469939**
Option 2 ID : **441009469938**
Option 3 ID : **441009469936**
Option 4 ID : **441009469937**
Status : **Answered**
Chosen Option : **2**

Q.43 If spectral components of the transmitted signal are affected by different amplitude gains and phase shifts, the fading is said to be _____.

Ans
✗ 1. aliasing
✓ 2. frequency selective fading
✗ 3. frequency upshifting
✗ 4. frequency down shifting

Question ID : **441009118350**
Option 1 ID : **441009470563**
Option 2 ID : **441009470562**
Option 3 ID : **441009470560**
Option 4 ID : **441009470561**
Status : **Not Answered**
Chosen Option : **--**

Q.44 Identify the correct sequence of Fax machine operating principle.

Ans
✗ 1. Digital processing-transmission-scanning-reception
✗ 2. Reception-scanning-digital processing-transmission
✗ 3. Digital processing-transmission-reception-scanning
✓ 4. Scanning-digital processing-transmission-reception

Question ID : **441009116230**
Option 1 ID : **441009462345**
Option 2 ID : **441009462347**
Option 3 ID : **441009462344**
Option 4 ID : **441009462346**
Status : **Answered**
Chosen Option : **1**

Q.45 Why are manganin resistors used in Crompton DC potentiometer?

Ans
✗ 1. Manganin has high stability, high temperature co-efficient and free from thermo-electric effect against copper.

✓ 2. Manganin has high stability, low temperature co-efficient and free from thermo-electric effect against copper.

✗ 3. Manganin has low stability, high temperature co-efficient and free from thermo-electric effect against copper.

✗ 4. Manganin has low stability, low temperature co-efficient and free from thermo-electric effect against copper.

Question ID : **441009106030**
Option 1 ID : **441009422170**
Option 2 ID : **441009422169**
Option 3 ID : **441009422171**
Option 4 ID : **441009422172**
Status : **Answered**
Chosen Option : **1**

Q.46 What are the input and output signals of the feedback network in a current-series feedback amplifier?

Ans
✗ 1. The input is current, and the output is current.

✗ 2. The input is voltage, and the output is voltage.

✓ 3. The input is voltage, and the output is current.

✗ 4. The input is current, and the output is voltage.

Question ID : **441009133377**
Option 1 ID : **441009530308**
Option 2 ID : **441009530307**
Option 3 ID : **441009530306**
Option 4 ID : **441009530309**
Status : **Answered**
Chosen Option : **1**

Q.47 The input offset voltage of an operational amplifier (Op-Amp) is primarily caused by:

Ans
✗ 1. the difference in the power supply voltages at the positive and negative terminals

✓ 2. mismatches in the input transistors due to fabrication variations

✗ 3. the input bias current flowing through external resistors

✗ 4. the temperature dependence of the output stage of the Op-Amp

Question ID : **44100982169**
Option 1 ID : **441009326361**
Option 2 ID : **441009326362**
Option 3 ID : **441009326363**
Option 4 ID : **441009326364**
Status : **Answered**
Chosen Option : **1**

Q.48 What is the size of the timer in mode 1 of timer operation in the 8051 microcontroller?

Ans
✗ 1. 13-bit
✗ 2. 8-bit
✓ 3. 16-bit
✗ 4. 32-bit

Question ID : **441009167340**
Option 1 ID : **441009662500**
Option 2 ID : **441009662499**
Option 3 ID : **441009662501**
Option 4 ID : **441009662502**
Status : **Answered**
Chosen Option : **2**

Q.49 Identify the correct statement related to luminance in colour TV.

Ans
✗ 1. In colour television, a change in the luminance signal will cause a change in resolution of the video signal.
✓ 2. In colour television, a change in the luminance signal will cause a change in the brightness of a colour.
✗ 3. In colour television, a change in the luminance signal will cause a change in aspect ratio of the display.
✗ 4. In colour television, a change in the luminance signal will cause a change in volume of the audio.

Question ID : **441009116330**
Option 1 ID : **441009462753**
Option 2 ID : **441009462755**
Option 3 ID : **441009462754**
Option 4 ID : **441009462752**
Status : **Answered**
Chosen Option : **2**

Q.50 Identify the correct statement related to CDMA.

Ans
✗ 1. CDMA's spread-spectrum is more prone to interference from external sources.
✗ 2. The CDMA capacity is slightly less than or equal to the capacity of other multiple access methods like TDMA and FDMA.
✗ 3. CDMA can support smaller number of users in the same frequency band than other multiple access methods like TDMA and FDMA.
✓ 4. CDMA can support a larger number of users in the same frequency band than other multiple access methods like TDMA and FDMA.

Question ID : **441009118170**
Option 1 ID : **441009469843**
Option 2 ID : **441009469842**
Option 3 ID : **441009469841**
Option 4 ID : **441009469840**
Status : **Answered**
Chosen Option : **4**

Q.51 How many clock pulses are required to shift out all the data from an n-bit Parallel In Serial Out (PISO) shift register after it has been loaded with parallel data?

Ans
✔ 1. n
✘ 2. 2n
✘ 3. n+1
✘ 4. 1

Question ID : **441009164250**
Option 1 ID : **441009650619**
Option 2 ID : **441009650620**
Option 3 ID : **441009650621**
Option 4 ID : **441009650618**
Status : **Answered**
Chosen Option : **1**

Q.52 What are the roles of the bits in the Interrupt Register (IR) for timers in an LPC214x microcontroller?

Ans
✘ 1. Stores the timer count
✔ 2. Flags interrupt events like match and capture
✘ 3. Used to enable timer interrupts
✘ 4. Sets clock division ratio

Question ID : **441009167249**
Option 1 ID : **441009662144**
Option 2 ID : **441009662145**
Option 3 ID : **441009662143**
Option 4 ID : **441009662146**
Status : **Answered**
Chosen Option : **3**

Q.53 Read the given statements related to LTE-TDD and LTE-FDD wireless communication and select the correct option.

Statement I: LTE-FDD uses separate frequency bands for uplink and downlink.
Statement II: LTE-TDD transmissions are separated in time; hence, uplink and downlink occur in the same time slots.

Ans
✘ 1. Both statements I and II are incorrect.
✔ 2. Only statement I is correct.
✘ 3. Both statements I and II are correct.
✘ 4. Only statement II is correct.

Question ID : **441009118113**
Option 1 ID : **441009469619**
Option 2 ID : **441009469616**
Option 3 ID : **441009469618**
Option 4 ID : **441009469617**
Status : **Answered**
Chosen Option : **1**

Q.54 Which of the following oscillators is used as a signal source in a Vector Impedance Meter?

Ans
✗ 1. Hartley oscillator
✗ 2. Colpitts oscillator
✓ 3. Wein bridge oscillator
✗ 4. Both Hartley and Colpitts oscillators

Question ID : **44100999547**
Option 1 ID : **441009396125**
Option 2 ID : **441009396127**
Option 3 ID : **441009396126**
Option 4 ID : **441009396128**
Status : **Answered**
Chosen Option : **4**

Q.55 Which component in a hydraulic control system is responsible for converting hydraulic energy into mechanical motion?

Ans
✗ 1. Pump
✗ 2. Reservoir
✓ 3. Actuator
✗ 4. Pressure relief valve

Question ID : **441009123409**
Option 1 ID : **441009490535**
Option 2 ID : **441009490537**
Option 3 ID : **441009490536**
Option 4 ID : **441009490538**
Status : **Answered**
Chosen Option : **4**

Q.56 An RC circuit is discharged through a resistor of 2.2 kΩ. The capacitor initially holds a charge of 200 μC and has a capacitance of 47 μF.
What time does it take for the capacitor voltage to reach 10% of its initial value?

Ans
✗ 1. 103.4 × ln(0.01) ms
✗ 2. 203.4 × ln(10) ms
✓ 3. 103.4 × ln(10) ms
✗ 4. 303.4 × ln(0.01)ms

Question ID : **441009113461**
Option 1 ID : **441009451353**
Option 2 ID : **441009451352**
Option 3 ID : **441009451351**
Option 4 ID : **441009451354**
Status : **Not Answered**
Chosen Option : **--**

Q.57 Which of the following error detection methods uses polynomial division to generate a frame check sequence appended to the data?

Ans
✗ 1. Hamming Code
✗ 2. Parity Bit
✓ 3. Cyclic Redundancy Check (CRC)
✗ 4. Checksum

Question ID : **441009909299**
Option 1 ID : **4410093591059**
Option 2 ID : **4410093591057**
Option 3 ID : **4410093591058**
Option 4 ID : **4410093591060**
Status : **Answered**
Chosen Option : **4**

Q.58 Consider an RC series circuit with R = 2 Ω and C = 5 μF, driven by a step input Vs(t) = 10 V.
Using Laplace transforms, determine the time-domain expression for the voltage across the capacitor Vc (t).

Ans
✓ 1. Vc(t) = 10 [1 – e ^ (−105t)] u(t) volts.
✗ 2. Vc(t) = 10 [1 – e ^ (105t)] u(t) volts.
✗ 3. Vc(t) = 15 [1 – e ^ (−105t)] u(t) volts.
✗ 4. Vc(t) = 10 [1 – e ^ (−10-5t)] u(t) volts.

Question ID : **441009113378**
Option 1 ID : **441009451023**
Option 2 ID : **441009451025**
Option 3 ID : **441009451024**
Option 4 ID : **441009451026**
Status : **Not Answered**
Chosen Option : **--**

Q.59 To measure time delay between two sine functions displayed on a dual trace CRO, which mode of triggering should NOT be used?

Ans
✗ 1. External triggering
✓ 2. Mixed triggering
✗ 3. Triggering from Channel 2 only
✗ 4. Triggering from Channel 1 only

Question ID : **441009105598**
Option 1 ID : **441009420528**
Option 2 ID : **441009420529**
Option 3 ID : **441009420527**
Option 4 ID : **441009420526**
Status : **Answered**
Chosen Option : **2**

Q.60 The Y-parameters of a two-port network are given by:
Y11 = 0.5S,
Y12 = −0.2S,
Y21 = 0.3S,
Y22 = 0.4S
If the input voltage V1 = 10V and the output current I2 = 2A, find the output voltage V2 and input current I1.

Ans
✔ 1. The output voltage is -2.5 V and the input current is 5.5 A.
✘ 2. The output voltage is 2.5 V and the input current is -5.5 A.
✘ 3. The output voltage is 5.5 V and the input current is 2.5 A.
✘ 4. The output voltage is 5.5 V and the input current is 5.5 A.

Question ID : **441009113674**
Option 1 ID : **441009452186**
Option 2 ID : **441009452187**
Option 3 ID : **441009452188**
Option 4 ID : **441009452189**
Status : **Not Answered**
Chosen Option : **--**

Q.61 What is the minimum value of a signed 16-bit integer in Embedded C?

Ans
✔ 1. -32768
✘ 2. 0
✘ 3. -1
✘ 4. -32767

Question ID : **441009113791**
Option 1 ID : **441009452642**
Option 2 ID : **441009452645**
Option 3 ID : **441009452644**
Option 4 ID : **441009452643**
Status : **Answered**
Chosen Option : **4**

Q.62 Which of the following is true about Wide Band FM (WBFM) compared to Narrow Band FM (NBFM)?

Ans
✘ 1. WBFM has fewer sidebands, making it more bandwidth-efficient
✘ 2. WBFM does not use the carrier frequency for transmission
✘ 3. WBFM has a much smaller frequency deviation than NBFM
✔ 4. WBFM requires more bandwidth due to the larger frequency deviation

Question ID : **44100982636**
Option 1 ID : **441009328331**
Option 2 ID : **441009328334**
Option 3 ID : **441009328332**
Option 4 ID : **441009328333**
Status : **Answered**
Chosen Option : **4**

Q.63 Which method is most effective for saving energy in an industrial motor control system?

Ans
✗ 1. Using only manual control for motors
✓ 2. Using a Variable Frequency Drive (VFD)
✗ 3. Keeping all machines running continuously
✗ 4. Always running the motor at maximum speed

Question ID : **441009123255**
Option 1 ID : **441009489922**
Option 2 ID : **441009489920**
Option 3 ID : **441009489923**
Option 4 ID : **441009489921**
Status : **Answered**
Chosen Option : **2**

Q.64 Identify the correct statement related to the path loss in mobile communication systems.

Ans
✓ 1. The higher the noise, the higher the path loss and the higher the transmission errors.
✗ 2. The lower the noise, the higher the path loss and the higher the transmission errors.
✗ 3. The higher the noise, the lower the path loss and the higher the transmission errors.
✗ 4. The higher the noise, the higher the path loss and the lower the transmission errors.

Question ID : **441009118294**
Option 1 ID : **441009470338**
Option 2 ID : **441009470339**
Option 3 ID : **441009470337**
Option 4 ID : **441009470336**
Status : **Answered**
Chosen Option : **1**

Q.65 What type of network layer does Zigbee use?

Ans
✗ 1. IP
✗ 2. UDP
✗ 3. TCP / IP
✓ 4. Zigbee Device Profile (ZDP)

Question ID : **441009113885**
Option 1 ID : **441009453010**
Option 2 ID : **441009453012**
Option 3 ID : **441009453011**
Option 4 ID : **441009453013**
Status : **Answered**
Chosen Option : **4**

Q.66 A rectangular waveguide is primarily used to guide:

Ans
✓ 1. electromagnetic waves
✗ 2. mechanical vibrations
✗ 3. sound waves
✗ 4. electrical currents

Question ID : **441009116267**
Option 1 ID : **441009462513**
Option 2 ID : **441009462515**
Option 3 ID : **441009462514**
Option 4 ID : **441009462512**
Status : **Answered**
Chosen Option : **1**

Q.67 A common modulation format used in frequency hopping spread spectrum(FHSS) is:

Ans
✔ 1. M-ary FSK
✘ 2. QPSK
✘ 3. M-ary PSK
✘ 4. BPSK

Question ID : **441009199681**
Option 1 ID : **441009786017**
Option 2 ID : **441009786015**
Option 3 ID : **441009786016**
Option 4 ID : **441009786014**
Status : **Answered**
Chosen Option : **1**

Q.68 Which one of the following is a transfer instrument?

Ans
✘ 1. DC Potentiometer
✔ 2. Electro Dynamo Type Instruments
✘ 3. Moving Iron Type Instruments
✘ 4. Moving Coil Type Instruments

Question ID : **441009103801**
Option 1 ID : **441009413412**
Option 2 ID : **441009413411**
Option 3 ID : **441009413409**
Option 4 ID : **441009413410**
Status : **Answered**
Chosen Option : **2**

Q.69 Identify the INCORRECT statement related to 3-D TV technology.

Ans
✔ 1. 3D TVs typically have low resolution than CRT TVs.
✘ 2. 3D TVs create the illusion of depth.
✘ 3. 3D TVs have multiple connectivity options like HDMI and USB ports for connecting various devices.
✘ 4. Active 3D uses battery-powered glasses that sync with the TV.

Question ID : **441009116425**
Option 1 ID : **441009463112**
Option 2 ID : **441009463111**
Option 3 ID : **441009463113**
Option 4 ID : **441009463114**
Status : **Answered**
Chosen Option : **1**

Q.70 If the symbol time duration Ts is smaller than the channel's coherence time Tc, then the fading is termed as _____.

Ans
✘ 1. flat fading
✘ 2. frequency selective fading
✔ 3. slow fading
✘ 4. fast fading

Question ID : **441009118344**
Option 1 ID : **441009470537**
Option 2 ID : **441009470539**
Option 3 ID : **441009470536**
Option 4 ID : **441009470538**
Status : **Answered**
Chosen Option : **3**

Q.71 In industrial automation, which method is commonly used to define conditions in control systems?

Ans
✗ 1. Using AI-based control algorithms for predictive decision-making
✓ 2. Ladder logic using normally open (NO) and normally closed (NC) contacts
✗ 3. Manually adjusting mechanical relays based on process requirements
✗ 4. Writing conditional expressions in high-level programming languages

Question ID : **441009126784**
Option 1 ID : **441009503814**
Option 2 ID : **441009503812**
Option 3 ID : **441009503815**
Option 4 ID : **441009503813**
Status : **Answered**
Chosen Option : **4**

Q.72 Which of the following methods can be used to minimise slope overload distortion in Delta Modulation (DM)?

Ans
✗ 1. Reducing the bit rate by lowering the sampling rate
✗ 2. Decreasing the sampling rate while keeping the step size constant
✗ 3. Applying PCM instead of Delta Modulation
✓ 4. Increasing the step size to track rapid variations in the input signal

Question ID : **44100982720**
Option 1 ID : **441009328668**
Option 2 ID : **441009328667**
Option 3 ID : **441009328670**
Option 4 ID : **441009328669**
Status : **Answered**
Chosen Option : **4**

Q.73 Which of the following statements is INCORRECT about an N-channel depletion MOSFET?

Ans
✓ 1. The type of charge carriers responsible for conduction depends on the polarity of the applied gate to source voltage (VGS).
✗ 2. The MOSFET has very high input impedance due to its insulated gate.
✗ 3. In an N-channel depletion MOSFET, the gate is insulated with SiO_2.
✗ 4. The N-channel depletion MOSFET does not require an applied gate to source voltage (VGS) to form a channel.

Question ID : **441009133700**
Option 1 ID : **441009531570**
Option 2 ID : **441009531572**
Option 3 ID : **441009531569**
Option 4 ID : **441009531571**
Status : **Answered**
Chosen Option : **4**

Q.74 Which of the following term represents the resolution of an instrument?

Ans ✔ 1. Discrimination

✗ 2. Repeatability

✗ 3. Reproducibility

✗ 4. Precision

Question ID : **441009103192**
Option 1 ID : **441009410853**
Option 2 ID : **441009410854**
Option 3 ID : **441009410852**
Option 4 ID : **441009410851**
Status : **Answered**
Chosen Option : **4**

Q.75 What is the primary advantage of using a Programmable Logic Controller (PLC) over traditional relay-based control systems?

Ans ✗ 1. PLCs require frequent rewiring for program changes.

✔ 2. PLCs provide flexible programming and faster execution of control logic.

✗ 3. PLCs operate only with mechanical relays.

✗ 4. PLCs cannot be used in industrial environments.

Question ID : **441009126842**
Option 1 ID : **441009504052**
Option 2 ID : **441009504053**
Option 3 ID : **441009504055**
Option 4 ID : **441009504054**
Status : **Answered**
Chosen Option : **2**

Q.76 Which of the following statements about oscillator circuits is FALSE?

Ans ✔ 1. An oscillator with RC circuit is used to generate the frequency range of 100 kHz to hundreds of gigahertz.

✗ 2. A circuit that generates a sine wave is called a linear oscillator.

✗ 3. A circuit that generates a non-sinusoidal wave is called a nonlinear oscillator.

✗ 4. An oscillator with LC circuits is used to generate the frequency range of 100 kHz to hundreds of gigahertz.

Question ID : **441009133424**
Option 1 ID : **441009530488**
Option 2 ID : **441009530486**
Option 3 ID : **441009530487**
Option 4 ID : **441009530489**
Status : **Answered**
Chosen Option : **2**

Q.77 How many times will the following code execute the printf statement?

```
int i = 1;
while (i < 1)
{
printf("Hello");
i++;
}
```

Ans
✔ 1. 0
✘ 2. 1
✘ 3. Error
✘ 4. Infinite

Question ID : **441009117502**
Option 1 ID : **441009467193**
Option 2 ID : **441009467194**
Option 3 ID : **441009467196**
Option 4 ID : **441009467195**
Status : **Answered**
Chosen Option : **4**

Q.78 Identify the odd term out with respect to block diagram of an air conditioner.

Ans
✘ 1. Temperature sensor
✔ 2. Roller drum
✘ 3. Compressor
✘ 4. Microcontroller

Question ID : **441009116024**
Option 1 ID : **441009461509**
Option 2 ID : **441009461511**
Option 3 ID : **441009461510**
Option 4 ID : **441009461508**
Status : **Answered**
Chosen Option : **2**

Q.79 Considering 367 as octal number, what will be it's decimal equivalent?

Ans
✘ 1. 347
✘ 2. 192
✘ 3. 231
✔ 4. 247

Question ID : **44100994403**
Option 1 ID : **441009375597**
Option 2 ID : **441009375594**
Option 3 ID : **441009375596**
Option 4 ID : **441009375595**
Status : **Answered**
Chosen Option : **4**

Q.80 Which of the following statements is correct about peak inverse voltage (PIV) and transformer utilisation factor (TUF) of rectifiers?

Ans
✗ 1. The PIV of a bridge rectifier and a centre-tapped rectifier is the same.
✗ 2. The bridge rectifier has double PIV than a half-wave rectifier.
✗ 3. The TUF of a bridge rectifier and a centre-tapped rectifier is the same.
✓ 4. The bridge rectifier has a higher TUF than a centre-tapped rectifier.

Question ID : **441009133949**
Option 1 ID : **441009532470**
Option 2 ID : **441009532469**
Option 3 ID : **441009532471**
Option 4 ID : **441009532472**
Status : **Answered**
Chosen Option : **4**

Q.81 In the two-port networks, when determining one of the Z-parameter $Z_{11,}$ what condition is applied?

Ans
✗ 1. Input voltage is zero.
✗ 2. Input current is zero.
✗ 3. Output voltage is zero.
✓ 4. Output current is zero.

Question ID : **441009113648**
Option 1 ID : **441009452084**
Option 2 ID : **441009452082**
Option 3 ID : **441009452085**
Option 4 ID : **441009452083**
Status : **Answered**
Chosen Option : **4**

Q.82 Which of the following is the major disadvantage of a flash-type A/D converter when compared to other types of A/D converters like the successive approximation type?

Ans
✓ 1. It has a limited resolution, typically up to 8 bits.
✗ 2. It requires a high number of bits for accurate conversion.
✗ 3. It has a lower Signal-to-Noise Ratio (SNR).
✗ 4. It is slower than other A/D converters.

Question ID : **44100979752**
Option 1 ID : **441009316799**
Option 2 ID : **441009316800**
Option 3 ID : **441009316801**
Option 4 ID : **441009316798**
Status : **Answered**
Chosen Option : **2**

Q.83 Which of the following techniques is used to detect and correct errors in transmitted data?

Ans
✔ 1. Parity Check
✘ 2. Amplification
✘ 3. Hamming Code
✘ 4. Compression

Question ID : **441009909292**
Option 1 ID : **4410093591031**
Option 2 ID : **4410093591029**
Option 3 ID : **4410093591032**
Option 4 ID : **4410093591030**
Status : **Answered**
Chosen Option : **3**

Q.84 Identify the INVALID statement related to 2G technology.

Ans
✔ 1. 2G is operated on a bandwidth of 100 MHz.
✘ 2. 2G easily supports data speeds of up to 32 kbps.
✘ 3. 2G technology supports voice and SMS services.
✘ 4. GSM is a widely used 2G standard.

Question ID : **441009118061**
Option 1 ID : **441009469413**
Option 2 ID : **441009469414**
Option 3 ID : **441009469415**
Option 4 ID : **441009469412**
Status : **Answered**
Chosen Option : **1**

Q.85 Why is the Kelvin Bridge named as a double bridge?

Ans
✔ 1. It contains two sets of Ratio arms.
✘ 2. It can measure both High and Low resistance.
✘ 3. It can measure two unknown resistances simultaneously.
✘ 4. It uses two Standard arms.

Question ID : **44100997378**
Option 1 ID : **441009387717**
Option 2 ID : **441009387718**
Option 3 ID : **441009387716**
Option 4 ID : **441009387715**
Status : **Answered**
Chosen Option : **3**

Q.86 The general-purpose op-amps can be employed in the differential mode, which is called as _____.

Ans
✔ 1. differential Instrumentation amplifier
✘ 2. inverting amplifier
✘ 3. analogue multiplier
✘ 4. non inverting amplifier

Question ID : **441009111479**
Option 1 ID : **441009443464**
Option 2 ID : **441009443465**
Option 3 ID : **441009443467**
Option 4 ID : **441009443466**
Status : **Answered**
Chosen Option : **1**

Q.87 If a transmission line is short-circuited, its input impedance at quarter-wavelength (λ/4) will becomes:

Ans
✔ 1. infinite
✘ 2. zero
✘ 3. equal to the load impedance
✘ 4. equal to the characteristic impedance

Question ID : **441009114570**
Option 1 ID : **441009455719**
Option 2 ID : **441009455718**
Option 3 ID : **441009455721**
Option 4 ID : **441009455720**
Status : **Not Answered**
Chosen Option : **--**

Q.88 Which frequency band is typically used for FM radio broadcasting in most countries, and what is a key advantage of FM over AM?

Ans
✔ 1. 88–108 MHz; FM is less susceptible to noise and interference
✘ 2. 300–500 MHz; FM requires less bandwidth than AM
✘ 3. 2.4–2.5 GHz; FM signals can penetrate walls better
✘ 4. 530–1700 kHz; FM uses simpler receivers than AM

Question ID : **441009922318**
Option 1 ID : **4410093643354**
Option 2 ID : **4410093643357**
Option 3 ID : **4410093643356**
Option 4 ID : **4410093643355**
Status : **Answered**
Chosen Option : **1**

Q.89 Which of the following is a primary advantage of using a correlation receiver in digital communication systems?

Ans
✘ 1. It reduces the noise in the received signal.
✘ 2. It increases the data rate of the communication system.
✘ 3. It can detect signals with minimal bandwidth requirements.
✔ 4. It provides robust detection even in the presence of noise.

Question ID : **441009100056**
Option 1 ID : **441009398164**
Option 2 ID : **441009398166**
Option 3 ID : **441009398165**
Option 4 ID : **441009398167**
Status : **Not Answered**
Chosen Option : **--**

Q.90 Identify the correct method(s) to minimise co-channel interference in mobile communication systems.

Ans
✗ 1. Only use of space diversity
✓ 2. Minimise multipath fading and use space diversity
✗ 3. Neither control multipath fading nor use of space diversity
✗ 4. Only minimise multipath fading

Question ID : **441009118252**
Option 1 ID : **441009470169**
Option 2 ID : **441009470170**
Option 3 ID : **441009470171**
Option 4 ID : **441009470168**
Status : **Answered**
Chosen Option : **2**

Q.91 Which of the following is a typical application of a voltage to frequency converter?

Ans
✗ 1. Measurement of physical parameters such as temperature or pressure
✗ 2. Signal amplification in audio systems
✓ 3. Conversion of a continuous analog signal into a frequency-modulated signal
✗ 4. Filtering high-frequency noise from audio signals

Question ID : **44100982223**
Option 1 ID : **441009326591**
Option 2 ID : **441009326589**
Option 3 ID : **441009326590**
Option 4 ID : **441009326592**
Status : **Answered**
Chosen Option : **3**

Q.92 In a minimal RS232 connection between the 8051 (using a level converter) and another RS232 device, what are the minimum number of signal wires required for asynchronous serial communication?

Ans
✗ 1. 5 (Transmit, Receive, RTS, CTS and Ground)
✓ 2. 3 (Transmit, Receive and Ground)
✗ 3. 2 (Transmit and Receive)
✗ 4. 9 (Full RS232 with all handshake signals)

Question ID : **441009167192**
Option 1 ID : **441009661921**
Option 2 ID : **441009661920**
Option 3 ID : **441009661919**
Option 4 ID : **441009661922**
Status : **Answered**
Chosen Option : **4**

Q.93 Which of the following statements is FALSE about DIAC?

Ans
✗ 1. It can be turned ON when the anode voltage exceeds the breakover voltage.
✗ 2. The DIAC is a two-terminal device.
✗ 3. The primary function of a DIAC is to trigger the SCR.
✓ 4. It is a unidirectional device.

Question ID : **441009133917**
Option 1 ID : **441009532369**
Option 2 ID : **441009532367**
Option 3 ID : **441009532368**
Option 4 ID : **441009532370**
Status : **Answered**
Chosen Option : **4**

Q.94 In Relay Ladder Logic (RLL), what does a normally open (NO) contact represent?

Ans
✗ 1. The contact that is always closed
✗ 2. The switch that never changes state
✗ 3. The contact that is closed in its default state and opens when activated
✓ 4. The contact that is open in its default state and closes when activated

Question ID : **441009123442**
Option 1 ID : **441009490667**
Option 2 ID : **441009490669**
Option 3 ID : **441009490670**
Option 4 ID : **441009490668**
Status : **Answered**
Chosen Option : **4**

Q.95 Which of the following is a key application of an I-V (Current-to-Voltage) Converter using an operational amplifier?

Ans
✗ 1. Amplifying a low voltage signal for audio applications
✓ 2. Converting a current signal into a proportional voltage signal
✗ 3. Converting a signal to a form suitable for frequency modulation
✗ 4. Measuring the resistance of an unknown resistor

Question ID : **44100982102**
Option 1 ID : **441009326072**
Option 2 ID : **441009326071**
Option 3 ID : **441009326069**
Option 4 ID : **441009326070**
Status : **Answered**
Chosen Option : **1**

Q.96 Which of the following best describes a key advantage of a full mesh network topology?

Ans
✗ 1. It minimises redundancy to save bandwidth.
✗ 2. It is cost-effective and simple to install in large-scale networks.
✗ 3. It reduces the total number of cables required in a large network.
✓ 4. It provides dedicated links, ensuring high fault tolerance and reliability.

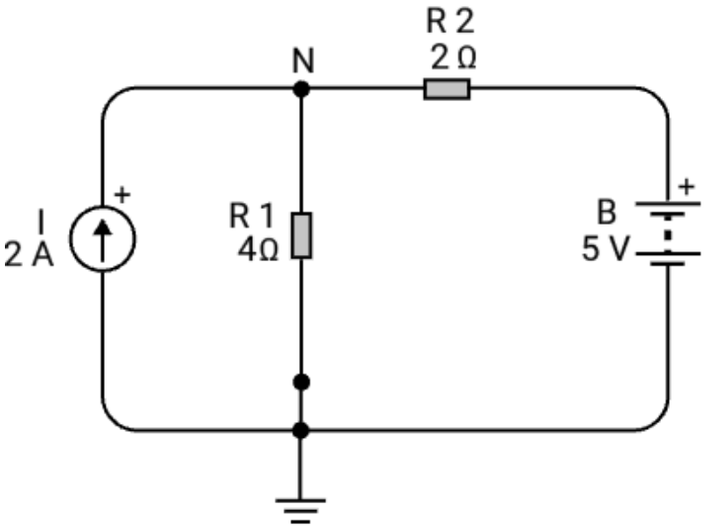
Question ID : **441009905364**
Option 1 ID : **4410093575274**
Option 2 ID : **4410093575276**
Option 3 ID : **4410093575273**
Option 4 ID : **4410093575275**
Status : **Answered**
Chosen Option : **4**

Q.97 Which real-time application uses microwave frequencies for detecting aircraft altitude?

Ans
✓ 1. Radio altimeter
✗ 2. GPS navigation
✗ 3. Barometric pressure sensor
✗ 4. Sonar systems

Question ID : **441009116698**
Option 1 ID : **441009463916**
Option 2 ID : **441009463915**
Option 3 ID : **441009463918**
Option 4 ID : **441009463917**
Status : **Answered**
Chosen Option : **4**

Q.98 For the circuit shown below, find the voltage at node N:



Ans
✗ 1. VN = 2 V
✓ 2. VN = 6 V
✗ 3. VN = 3 V
✗ 4. VN = 4 V

Question ID : **441009104853**
Option 1 ID : **441009417611**
Option 2 ID : **441009417613**
Option 3 ID : **441009417612**
Option 4 ID : **441009417610**
Status : **Not Answered**
Chosen Option : **--**

Q.99 Identify the INCORRECT statement related to Equal Gain Combining in wireless communication systems.

Ans
✗ 1. EGC aims to improve the signal-to-noise ratio (SNR).
✗ 2. EGC combines signals from multiple antennas with equal gain but adjusts their phases for coherent addition.
✗ 3. EGC is not as complex as the MRC technique.
✓ 4. EGC cannot be used to control fading.

Question ID : **441009118197**
Option 1 ID : **441009469949**
Option 2 ID : **441009469948**
Option 3 ID : **441009469950**
Option 4 ID : **441009469951**
Status : **Answered**
Chosen Option : **3**

Q.10 Which of the following is a core component of a Programmable Logic Controller (PLC)?
0

Ans
✗ 1. Hydraulic pump
✓ 2. Microprocessor
✗ 3. Capacitor bank
✗ 4. Oscilloscope

Question ID : **441009123437**
Option 1 ID : **441009490649**
Option 2 ID : **441009490648**
Option 3 ID : **441009490650**
Option 4 ID : **441009490647**
Status : **Answered**
Chosen Option : **2**

Q.10 What is the decimal value of 'v' after the following C code executes?
1

```
unsigned int v = 22;
v ^ = (v & 12) << 1;
```

Ans
✗ 1. 18
✗ 2. 6
✗ 3. 10
✓ 4. 30

Question ID : **441009117515**
Option 1 ID : **441009467244**
Option 2 ID : **441009467241**
Option 3 ID : **441009467242**
Option 4 ID : **441009467243**
Status : **Answered**
Chosen Option : **3**

Q.10 In control generation systems, a Programmable Logic Controller (PLC) is used for:
2

Ans
✗ 1. converting analogue signals to digital signals
✗ 2. measuring pressure and temperature directly
✓ 3. controlling industrial processes using programmed logic
✗ 4. providing direct manual control of industrial machines

Question ID : **441009123266**
Option 1 ID : **441009489965**
Option 2 ID : **441009489967**
Option 3 ID : **441009489964**
Option 4 ID : **441009489966**
Status : **Answered**
Chosen Option : **3**

Q.103 The Boolean function $Y = (A + BC)(B + \overline{C}\,A)$ is equivalent to _____

Ans
✗ 1. $(A + B)(B + C)$
✗ 2. $A\overline{B} + A\overline{C} + \overline{B}C$
✓ 3. $AB + A\overline{C} + BC$
✗ 4. $(A + C)(\overline{A} + B)$

Question ID : **441009102488**
Option 1 ID : **441009407985**
Option 2 ID : **441009407984**
Option 3 ID : **441009407983**
Option 4 ID : **441009407986**
Status : **Not Answered**
Chosen Option : **--**

Q.104 Which of the following is NOT an expression that is used to specify accuracy?

Ans
✓ 1. Zonal
✗ 2. Point
✗ 3. Percentage of scale range
✗ 4. Percentage of true value

Question ID : **441009103074**
Option 1 ID : **441009410368**
Option 2 ID : **441009410367**
Option 3 ID : **441009410369**
Option 4 ID : **441009410370**
Status : **Answered**
Chosen Option : **2**

Q.105 Which of the following statements correctly distinguishes between wired and wireless media in terms of security and interference?

Ans
✗ 1. Wired media offer better mobility but are more susceptible to interference than wireless media.
✓ 2. Wired media are generally less prone to interference and more secure, while wireless media are susceptible to signal attenuation, interception, and environmental noise.
✗ 3. Wireless media are immune to electromagnetic interference, unlike wired media that are affected by external RF signals.
✗ 4. Wireless media provide higher security due to dynamic encryption, while wired media are easier to intercept.

Question ID : **441009900973**
Option 1 ID : **4410093557962**
Option 2 ID : **4410093557964**
Option 3 ID : **4410093557965**
Option 4 ID : **4410093557963**
Status : **Answered**
Chosen Option : **2**

Q.10 What is the primary advantage of using Integrated Circuits (ICs) instead of discrete components in electronic circuits?
6

Ans
✔ 1. ICs are less expensive and more reliable due to miniaturization.
✘ 2. ICs offer lower power consumption compared to discrete components.
✘ 3. ICs provide better voltage regulation than discrete components.
✘ 4. ICs can operate at higher frequencies than discrete components.

Question ID : **44100982137**
Option 1 ID : **441009326219**
Option 2 ID : **441009326217**
Option 3 ID : **441009326218**
Option 4 ID : **441009326220**
Status : **Answered**
Chosen Option : **2**

Q.10 What is the primary purpose of negative feedback in an electronic circuit?
7

Ans
✘ 1. To decrease the bandwidth of the circuit
✘ 2. To decrease the gain of the circuit
✔ 3. To reduce distortion and improve linearity
✘ 4. To increase the gain and input impedance

Question ID : **441009133407**
Option 1 ID : **441009530423**
Option 2 ID : **441009530422**
Option 3 ID : **441009530425**
Option 4 ID : **441009530424**
Status : **Answered**
Chosen Option : **4**

Q.10 In a distortion-less transmission line, the phase velocity is:
8

Ans
✔ 1. independent of frequency
✘ 2. dependent on frequency
✘ 3. zero
✘ 4. infinite

Question ID : **441009114564**
Option 1 ID : **441009455695**
Option 2 ID : **441009455694**
Option 3 ID : **441009455696**
Option 4 ID : **441009455697**
Status : **Not Answered**
Chosen Option : **--**

Q.10 How does industrial automation contribute to energy savings in manufacturing processes?
9

Ans
✔ 1. By optimising power consumption through intelligent control algorithms

✗ 2. By manually adjusting motor speeds based on operator experience

✗ 3. By using mechanical relays instead of electronic components

✗ 4. By continuously running machines at full power to prevent shutdowns

Question ID : **441009126821**
Option 1 ID : **441009503969**
Option 2 ID : **441009503970**
Option 3 ID : **441009503971**
Option 4 ID : **441009503968**
Status : **Answered**
Chosen Option : **1**

Q.11 Identify the correct statement related to LED TV.
0

Ans
✗ 1. LED TVs support Full HD (1080p) resolutions only.

✗ 2. LED TVs do not support Full HD (1080p) resolutions and 4K UHD (Ultra High Definition).

✔ 3. LED TVs support Full HD (1080p) resolutions and 4K UHD (Ultra High Definition).

✗ 4. LED TVs support 4K UHD (Ultra High Definition) only.

Question ID : **441009116453**
Option 1 ID : **441009463231**
Option 2 ID : **441009463234**
Option 3 ID : **441009463233**
Option 4 ID : **441009463232**
Status : **Answered**
Chosen Option : **3**

Q.11 The input offset current of an operational amplifier (Op-Amp) is defined as:
1

Ans
✔ 1. the difference between the input bias currents at the inverting and non-inverting terminals

✗ 2. the current that compensates for any mismatch in the input transistors of the Op-Amp

✗ 3. the difference in the currents flowing into the non-inverting and inverting input terminals

✗ 4. the total current that flows into both input terminals of the Op-Amp

Question ID : **44100982160**
Option 1 ID : **441009326318**
Option 2 ID : **441009326319**
Option 3 ID : **441009326317**
Option 4 ID : **441009326320**
Status : **Answered**
Chosen Option : **3**

Q.11 A system requires routing signals from 16 different sources to one of the four destinations. What is the minimum number of multiplexers required to achieve this, assuming the multiplexers available are 4-to-1?

Ans
✗ 1. SIXTEEN
✓ 2. FIVE
✗ 3. FOUR
✗ 4. EIGHT

Question ID : **441009164182**
Option 1 ID : **441009650348**
Option 2 ID : **441009650346**
Option 3 ID : **441009650345**
Option 4 ID : **441009650347**
Status : **Answered**
Chosen Option : **2**

Q.11 What will be the content of A after executing the following instructions in the 8051 microcontroller?

```
MOV A, #0x0F
ADD A, #0x01
```

Ans
✗ 1. 0xF0
✗ 2. 0x01
✓ 3. 0x10
✗ 4. 0x00

Question ID : **441009167294**
Option 1 ID : **441009662322**
Option 2 ID : **441009662321**
Option 3 ID : **441009662320**
Option 4 ID : **441009662319**
Status : **Not Answered**
Chosen Option : **--**

Q.11 If the Arduino Mega is powered by a 12V DC adapter and the onboard regulator dissipates heat with an efficiency of 50%, how much power is wasted as heat when the Arduino Mega draws 200mA of current?

Ans
✗ 1. 3.2 W
✓ 2. 1.2 W
✗ 3. 2.6 W
✗ 4. 1.8 W

Question ID : **441009113762**
Option 1 ID : **441009452533**
Option 2 ID : **441009452531**
Option 3 ID : **441009452532**
Option 4 ID : **441009452530**
Status : **Answered**
Chosen Option : **3**

Q.11 5 The Z-parameters of a two-port network are given as: Z11 = 4 Ω, Z12 = 2 Ω, Z21 = 2 Ω, Z22 = 6 Ω. What are the corresponding Y-parameters?

Ans
✔ 1. Y11 = 0.3 S,Y12 = −0.1 S, Y21 = −0.1 S, Y22 = 0.2 S
✘ 2. Y11 = 0.2 S,Y12 = −0.1 S, Y21 = −0.1 S, Y22 = 0.3 S
✘ 3. Y11 = 0.3 S,Y12 = 0.1 S, Y21 = 0.1 S, Y22 = 0.2 S
✘ 4. Y11 = 0.2 S,Y12 = 0.1 S, Y21 = 0.1 S, Y22 = 0.3 S

Question ID : **441009113657**
Option 1 ID : **441009452118**
Option 2 ID : **441009452119**
Option 3 ID : **441009452120**
Option 4 ID : **441009452121**
Status : **Not Answered**
Chosen Option : **--**

Q.11 6 In the process of analog-to-digital conversion, which of the following best describes how quantisation noise can be minimised without increasing the sampling rate?

Ans
✔ 1. Decreasing the number of quantisation levels
✘ 2. Increasing the bit depth of the quantiser
✘ 3. Applying companding after encoding
✘ 4. Using delta modulation instead of PCM

Question ID : **441009921973**
Option 1 ID : **4410093641962**
Option 2 ID : **4410093641960**
Option 3 ID : **4410093641961**
Option 4 ID : **4410093641959**
Status : **Answered**
Chosen Option : **3**

Q.11 7 What is the function of the U0IER register in UART0 of LPC2148?

Ans
✘ 1. Disables FIFO mode
✘ 2. Sets baud rate
✔ 3. Enables UART interrupts like RDA, THRE, RLS
✘ 4. Indicates transmission error

Question ID : **441009167231**
Option 1 ID : **441009662074**
Option 2 ID : **441009662072**
Option 3 ID : **441009662073**
Option 4 ID : **441009662071**
Status : **Answered**
Chosen Option : **3**

Q.118 State the reason why oscilloscope is NOT considered as a precision frequency measuring tool.

Ans
✗ 1. Accuracy of the frequency measurement depends on delay line.
✓ 2. Accuracy of the frequency measurement depends on the accuracy of time base.
✗ 3. Accuracy of the frequency measurement depends on horizontal amplifier gain.
✗ 4. Accuracy of the frequency measurement depends on vertical amplifier gain.

Question ID : **441009105575**
Option 1 ID : **441009420439**
Option 2 ID : **441009420438**
Option 3 ID : **441009420440**
Option 4 ID : **441009420441**
Status : **Not Answered**
Chosen Option : **--**

Q.119 Which of the following statements is correct for the I_B vs V_{BE} plot of a common-emitter (CE) amplifier?

Ans
✗ 1. Typically, the input current (IB) is in the range of up to 10A, while the input voltage (VBE) is in the range of up to 5V.
✓ 2. The input current (IB) decreases with an increase in the reverse-biased output voltage.
✗ 3. The IB vs VBE plot is linear.
✗ 4. In a CE amplifier, the IB vs VBE plot is plotted at a constant IE.

Question ID : **441009133609**
Option 1 ID : **441009531162**
Option 2 ID : **441009531160**
Option 3 ID : **441009531161**
Option 4 ID : **441009531159**
Status : **Answered**
Chosen Option : **1**

Q.120 In the context of electrical circuit duality, what is the dual of a voltage source?

Ans
✗ 1. A capacitor
✗ 2. An inductor
✓ 3. A current source
✗ 4. A resistor

Question ID : **441009111503**
Option 1 ID : **441009443556**
Option 2 ID : **441009443558**
Option 3 ID : **441009443557**
Option 4 ID : **441009443555**
Status : **Answered**
Chosen Option : **3**

Q.12 Identify the correct statement related to SDI Serial Digital Interface.
1

Ans
✗ 1. SDI signals are compressed and use asynchronous communication between the source transmitter and the destination receiver.

✗ 2. SDI signals are compressed and use self-synchronous communication between the source transmitter and the destination receiver.

✗ 3. SDI signals are uncompressed and use asynchronous communication between the source transmitter and the destination receiver.

✓ 4. SDI signals are uncompressed and use self-synchronous communication between the source transmitter and the destination receiver.

Question ID : **441009116494**
Option 1 ID : **441009463393**
Option 2 ID : **441009463391**
Option 3 ID : **441009463392**
Option 4 ID : **441009463394**
Status : **Not Answered**
Chosen Option : **--**

Q.12 In RS-232 communication, what voltage range typically represents a logic '1' (mark)?
2

Ans
✓ 1. −3V to −15V

✗ 2. 0V to +5V

✗ 3. 0V

✗ 4. +3V to +15V

Question ID : **441009167193**
Option 1 ID : **441009661925**
Option 2 ID : **441009661926**
Option 3 ID : **441009661924**
Option 4 ID : **441009661923**
Status : **Answered**
Chosen Option : **4**

Q.12 What is the SNR in dB of uniform quantizer in case of PCM considering the sinusoidal modulating signal and quantization noise? (R = number of bits per sample)
3

Ans
✓ 1. 1.8+6R

✗ 2. 1.8+16R

✗ 3. 1.8+64R

✗ 4. 1.8+32R

Question ID : **441009130657**
Option 1 ID : **441009519165**
Option 2 ID : **441009519166**
Option 3 ID : **441009519168**
Option 4 ID : **441009519167**
Status : **Not Answered**
Chosen Option : **--**

Q.12 Which of the following is the primary purpose of an opto coupler in electronic circuits?
4

Ans
✗ 1. To amplify electrical signals for long-distance transmission
✓ 2. To isolate electrical signals between different parts of a circuit while transmitting data
✗ 3. To convert analog signals into digital signals
✗ 4. To convert electrical signals into optical signals for wireless communication

Question ID : **44100982261**
Option 1 ID : **441009326773**
Option 2 ID : **441009326774**
Option 3 ID : **441009326775**
Option 4 ID : **441009326776**
Status : **Answered**
Chosen Option : **4**

Q.12 Which of the following is a key parameter that determines the precision of an ADC?
5

Ans
✗ 1. Power consumption
✗ 2. Sampling rate
✓ 3. Resolution (number of bits)
✗ 4. Input impedance

Question ID : **441009164224**
Option 1 ID : **441009650516**
Option 2 ID : **441009650513**
Option 3 ID : **441009650515**
Option 4 ID : **441009650514**
Status : **Answered**
Chosen Option : **3**

Q.12 The process of mixing two signals to produce sum and difference frequencies is called:
6

Ans
✗ 1. multiplexing
✓ 2. heterodyning
✗ 3. frequency conversion
✗ 4. modulation

Question ID : **441009116295**
Option 1 ID : **441009462619**
Option 2 ID : **441009462618**
Option 3 ID : **441009462617**
Option 4 ID : **441009462616**
Status : **Answered**
Chosen Option : **1**

Q.127 Which of the following techniques is used to enhance the stability of a microwave oscillator?

Ans
✗ 1. Increasing the resistance in the circuit
✓ 2. Using a phase-locked loop (PLL)
✗ 3. Increasing the supply voltage
✗ 4. Reducing the number of components

Question ID : **441009116303**
Option 1 ID : **441009462651**
Option 2 ID : **441009462649**
Option 3 ID : **441009462648**
Option 4 ID : **441009462650**
Status : **Answered**
Chosen Option : **2**

Q.128 Which of the following statements is true about the constraint length of a Convolutional Code?

Ans
✗ 1. The constraint length is inversely related to the code rate of the Convolutional Code.
✗ 2. The constraint length is the number of output bits generated for each input bit.
✓ 3. The constraint length is defined by the number of shift registers used in the encoder.
✗ 4. The constraint length determines the maximum number of errors that can be corrected by the code.

Question ID : **441009100780**
Option 1 ID : **441009401117**
Option 2 ID : **441009401114**
Option 3 ID : **441009401115**
Option 4 ID : **441009401116**
Status : **Answered**
Chosen Option : **1**

Q.129 Which one of the following transducers can act as both primary and secondary transducer?

Ans
✗ 1. Strain Gauge
✗ 2. Capacitive
✗ 3. RTD
✓ 4. LVDT

Question ID : **441009107984**
Option 1 ID : **441009429947**
Option 2 ID : **441009429948**
Option 3 ID : **441009429949**
Option 4 ID : **441009429946**
Status : **Answered**
Chosen Option : **4**

Q.13 Which of the following problems arises if the sampling rate is lower than the Nyquist rate, according to the Sampling Theorem?

Ans
✔ 1. Aliasing
✘ 2. Loss of signal energy
✘ 3. Signal amplification
✘ 4. Increased signal bandwidth

Question ID : **44100999979**
Option 1 ID : **441009397865**
Option 2 ID : **441009397866**
Option 3 ID : **441009397864**
Option 4 ID : **441009397867**
Status : **Answered**
Chosen Option : **1**

Q.13 Inverting amplifier is most widely used as a _____.

Ans
✘ 1. subtractor amplifier
✘ 2. differential amplifier
✘ 3. summing amplifier
✔ 4. constant gain amplifier

Question ID : **441009111429**
Option 1 ID : **441009443261**
Option 2 ID : **441009443263**
Option 3 ID : **441009443262**
Option 4 ID : **441009443260**
Status : **Answered**
Chosen Option : **1**

Q.13 Which of the following is a key characteristic of Frequency Hopping Spread Spectrum (FHSS)?

Ans
✘ 1. The signal is transmitted using time slots that are allocated to users sequentially.
✘ 2. It spreads the signal across a wide frequency band using a single frequency channel over time.
✘ 3. It uses a fixed frequency channel for data transmission to reduce the risk of signal degradation.
✔ 4. The carrier frequency is continuously shifted according to a specific hopping pattern, making the signal less susceptible to interference.

Question ID : **44100983646**
Option 1 ID : **441009332335**
Option 2 ID : **441009332332**
Option 3 ID : **441009332334**
Option 4 ID : **441009332333**
Status : **Answered**
Chosen Option : **4**

Q.13 What is the function of the IE (Interrupt Enable) register in the 8051 microcontroller?
3

Ans
1. It stores the current interrupt status.
2. It stores the interrupt vector addresses.
3. It enables or disables interrupt sources.
4. It configures the external interrupt source.

Question ID : **441009167286**
Option 1 ID : **441009662290**
Option 2 ID : **441009662287**
Option 3 ID : **441009662289**
Option 4 ID : **441009662288**
Status : **Answered**
Chosen Option : **3**

Q.13 What is the purpose of the refresh operation in DRAM?
4

Ans
1. To rewrite the data in the capacitors before it leaks away
2. To reduce power consumption
3. To speed up data access
4. To check for and correct errors in the stored data

Question ID : **441009164220**
Option 1 ID : **441009650499**
Option 2 ID : **441009650498**
Option 3 ID : **441009650497**
Option 4 ID : **441009650500**
Status : **Answered**
Chosen Option : **3**

Q.13 In Maximum Likelihood Decoding (MLD) for Quadrature Amplitude Modulation (QAM), which geometric feature of the constellation diagram is most critical for minimising bit errors?
5

Ans
1. The angle of the symbol points relative to the origin
2. The energy of each transmitted symbol
3. The number of symbols in the constellation diagram
4. The minimum distance between adjacent symbols

Question ID : **441009100077**
Option 1 ID : **441009398259**
Option 2 ID : **441009398257**
Option 3 ID : **441009398256**
Option 4 ID : **441009398258**
Status : **Answered**
Chosen Option : **3**

Q.13 6 Identify the suitable device that can be used for scanning and image processing to transmit and print the document at the receiving end.

Ans
✗ 1. Mirrorless camera
✗ 2. Washing machine
✓ 3. Fax machine
✗ 4. Xerox machine

Question ID : **441009116222**
Option 1 ID : **441009462315**
Option 2 ID : **441009462314**
Option 3 ID : **441009462313**
Option 4 ID : **441009462312**
Status : **Answered**
Chosen Option : **3**

Q.13 7 The probability of error in Non-Coherent Frequency Shift Keying (FSK) is primarily influenced by which of the following factors?

Ans
✓ 1. The signal-to-noise ratio
✗ 2. The frequency separation between the two signals
✗ 3. The number of bits per symbol
✗ 4. The phase of the signal

Question ID : **441009100024**
Option 1 ID : **441009398044**
Option 2 ID : **441009398047**
Option 3 ID : **441009398046**
Option 4 ID : **441009398045**
Status : **Answered**
Chosen Option : **2**

Q.13 8 Which of the following is the primary characteristic that distinguishes Narrow Band FM (NBFM) from Wide Band FM (WBFM) in terms of their frequency spectrum?

Ans
✗ 1. NBFM has a high modulation index leading to a broad spectrum
✗ 2. WBFM has fewer sidebands than NBFM
✗ 3. NBFM has a larger bandwidth, spreading across a wide frequency range
✓ 4. NBFM has a smaller bandwidth, with a few sidebands close to the carrier

Question ID : **44100982630**
Option 1 ID : **441009328310**
Option 2 ID : **441009328309**
Option 3 ID : **441009328308**
Option 4 ID : **441009328307**
Status : **Answered**
Chosen Option : **4**

Q.13 Given a tie-set matrix:

9

$$B = \begin{bmatrix} 1 & 1 & 0 & -1 \\ 0 & -1 & 1 & 0 \end{bmatrix}$$

If the branch voltages are V_2 = 2 V, V_3 = 2 V, and V_4 = 1 V, what is the value of V_1?

Ans

✗ 1. 1 V

✗ 2. 3 V

✗ 3. 0 V

✓ 4. -1 V

Question ID : **441009112121**
Option 1 ID : **441009446026**
Option 2 ID : **441009446028**
Option 3 ID : **441009446027**
Option 4 ID : **441009446025**
Status : **Answered**
Chosen Option : **1**

Q.14 In a frequency response plot, bandwidth is measured between the:

0

Ans

✗ 1. points where phase shift is maximum

✗ 2. highest and lowest operating voltages

✗ 3. points where power is maximum

✓ 4. points where power falls by 3 dB from the peak

Question ID : **441009116637**
Option 1 ID : **441009463768**
Option 2 ID : **441009463770**
Option 3 ID : **441009463767**
Option 4 ID : **441009463769**
Status : **Answered**
Chosen Option : **4**

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