QUESTION PAPER
Electronics [SHIFT - 1]

Exam Date : 18/01/2025 Time : 03:00 PM - 05:00 PM

Part I - Aptitude

Question 1 **Question Id : 126**

Directions: *Study the following passage to answer the question that follows.*

Passage
Work expands so as to fill the time available for its completion. The general recognition of this fact is shown in the proverbial phrase, 'It is the busiest man who has time to spare.' Thus, an elderly lady at leisure can spend the entire day writing a postcard to her niece. An hour will be spent in finding the postcard, another hunting for spectacles, half an hour to search for the address, an hour and a quarter in composition and twenty minutes in deciding whether or not to take an umbrella when going to the pillar box in the street. The total effort that would occupy a busy man for three minutes, all told, may in this fashion leave another person completely exhausted after a day of doubt, anxiety and toil.

What happens when the deadline for a task gets extended unexpectedly?

Answer : Option Id

(A) The work is done more smoothly. 126001
(B) The work is done with more leisure. 126002
(C) The work consumes all the available time. 126003
(D) The work still needs additional time. 126004

Right Answer : **Right Option Id : 126003**

The work consumes all the available time.

Question 2 **Question Id : 127**

Directions: *Study the following passage to answer the question that follows.*

Passage
Work expands so as to fill the time available for its completion. The general recognition of this fact is shown in the proverbial phrase, 'It is the busiest man who has time to spare.' Thus, an elderly lady at leisure can spend the entire day writing a postcard to her niece. An hour will be spent in finding the postcard, another hunting for spectacles, half an hour to search for the address, an hour and a quarter in composition and twenty minutes in deciding whether or not to take an umbrella when going to the pillar box in the street. The total effort that would occupy a busy man for three minutes, all told, may in this fashion leave another person completely exhausted after a day of doubt, anxiety and toil.

Explain the sentence: 'Work expands so as to fill the time available for its completion'.

Answer : Option Id

(A) The more work there is to be done, the more the time needed. 127001
(B) Whatever time is available for a given amount of work, all of it will get used. 127002
(C) If you have more time, you can do more work. 127003
(D) If you have some important work to do, you should always have some additional time. 127004

Right Answer : **Right Option Id : 127002**

Whatever time is available for a given amount of work all of it will get used.

Question 3 **Question Id : 128**

Directions: *Study the following passage to answer the question that follows.*

Passage
Work expands so as to fill the time available for its completion. The general recognition of this fact is shown in the proverbial phrase, 'It is the busiest man who has time to spare.' Thus, an elderly lady at leisure can spend the entire day writing a postcard to her niece. An hour will be spent in finding the postcard, another hunting for spectacles, half an hour to search for the address, an hour and a quarter in composition and twenty minutes in deciding whether or not to take an umbrella when going to the pillar box in the street. The total effort that would occupy a busy man for three minutes, all told, may in this fashion leave another person completely exhausted after a day of doubt, anxiety and toil.

Who is the person likely to take more time to do the certain work?

Answer : Option Id

(A) A busy man 128001
(B) A man of leisurely attitude 128002
(C) An elderly person 128003
(D) A relaxed man 128004

Right Answer : **Right Option Id : 128002**

A man of leisurely attitude

Question 4 **Question Id : 129**

Directions: *Study the following passage to answer the question that follows.*

Passage
Work expands so as to fill the time available for its completion. The general recognition of this fact is shown in the proverbial phrase, 'It is the busiest man who has time to spare.' Thus, an elderly lady at leisure can spend the entire day writing a postcard to her niece. An hour will be spent in finding the postcard, another hunting for spectacles, half an hour to search for the address, an hour and a quarter in composition and twenty minutes in deciding whether or not to take an umbrella when going to the pillar box in the street. The total effort that would occupy a busy man for three minutes, all told, may in this fashion leave another person completely exhausted after a day of doubt, anxiety and toil.

What is the total time spent by the elderly lady in writing the postcard?

Answer :

Option Id

(A) A full day — 129001
(B) Four hours and five minutes — 129002
(C) Well over half a day — 129003
(D) Seventy five minutes — 129004

Right Answer :
Seventy five minutes

Right Option Id : 129004

Question 5 **Question Id : 130**

Directions: *Study the following passage to answer the question that follows.*

Passage
Work expands so as to fill the time available for its completion. The general recognition of this fact is shown in the proverbial phrase, 'It is the busiest man who has time to spare.' Thus, an elderly lady at leisure can spend the entire day writing a postcard to her niece. An hour will be spent in finding the postcard, another hunting for spectacles, half an hour to search for the address, an hour and a quarter in composition and twenty minutes in deciding whether or not to take an umbrella when going to the pillar box in the street. The total effort that would occupy a busy man for three minutes, all told, may in this fashion leave another person completely exhausted after a day of doubt, anxiety and toil.

What does the expression 'pillar box' stand for?

Answer :

Option Id

(A) A box attached to the pillar — 130001
(B) A box in the pillar — 130002
(C) Box office — 130003
(D) A pillar-type post box — 130004

Right Answer :
A pillar-type post box

Right Option Id : 130004

Question 6 **Question Id : 131**

A cinema hall is 17 m 28 cm long and 11 m 52 cm broad. It is required to pave the floor of the hall by using the minimum number of square slabs of marble. How many such slabs are required?

Answer :

Option Id

(A) 4 — 131001
(B) 5 — 131002
(C) 6 — 131003
(D) 7 — 131004

Right Answer :
6

Right Option Id : 131003

Question 7 **Question Id : 132**

If the income of an employee is increasing annually by 10%, what will be the change in his income after two years?

Answer :

Option Id

(A) 21% increase — 132001
(B) 22% increase — 132002
(C) 23% increase — 132003
(D) 25% increase — 132004

Right Answer :
21% increase

Right Option Id : 132001

Question 8 **Question Id : 133**

Three years ago, the average age of a family of 5 members was 17 years. With the birth of a baby, the average age of six members remains the same even today. Find the age of the baby.

Answer :

Option Id

(A) 1 year — 133001
(B) 2 years — 133002
(C) 3 years — 133003

(D) 4 years

133004

Right Answer :

2 years

Right Option Id : 133002

Question 9

Question Id : 134

A sum of Rs.8000 is deposited in the bank. The rate of interest in the bank for first year is 5% and for the second year it is 8%. Find the compound interest.

Answer :

Option Id

(A) Rs.1072

134001

(B) Rs.980

134002

(C) Rs.1124

134003

(D) Rs.1242

134004

Right Answer :

Rs.1072

Right Option Id : 134001

Question 10

Question Id : 135

A train 135 m long passes a boy standing on the platform in 7 seconds, but it passes the platform completely in 21 seconds. The length of the platform is _____.

Answer :

Option Id

(A) 310 m

135001

(B) 185 m

135002

(C) 215 m

135003

(D) 270 m

135004

Right Answer :

270 m

Right Option Id : 135004

Question 11

Question Id : 136

Find the odd one out.

ABC, BDF, CFI, DHL, EJM, FLR

Answer :

Option Id

(A) BDF

136001

(B) DHL

136002

(C) FLR

136003

(D) EJM

136004

Right Answer :

EJM

Right Option Id : 136004

Question 12

Question Id : 137

In a certain code, HIMALAYA is written as 201915271627327 and NILGIRI is written as 14191621191019. How is HARYALI written in that code?

Answer :

Option Id

(A) 2027103271619

137001

(B) 2010276271620

137002

(C) 2010296271619

137003

(D) 2011276271619

137004

Right Answer :

2027103271619

Right Option Id : 137001

Question 13

Question Id : 138

Aditi started travelling east from point A for 800 m. At the end of 800 m, she reached point B. She took a left turn from point B and travelled for another 500 m and reached point C. From point C, she turned left again and travelled for 400 m to reach point D. In which direction is point D from point A?

Answer :

Option Id

(A) North-East — 138001
(B) South-West — 138002
(C) North-West — 138003
(D) South-East — 138004

Right Answer :

North-East

Right Option Id : 138001

Question 14

Question Id : 139

Directions: *Study the following information carefully to answer the question that follows.*

Six friends A, B, C, D, E and F are sitting around a round table planning a carnival. They are not necessarily sitting in the same order. All are facing inside. A is sitting second to the left of B. F is sitting opposite to the person who sits to the immediate right of D. B sits between E on one side and F on the other. D doesn't sit between A and E. The friend sitting next to F doesn't sit to the immediate right of E.

Who among the following could be sitting between A and C?

Answer :

Option Id

(A) E — 139001
(B) B — 139002
(C) D — 139003
(D) Can't be determined — 139004

Right Answer :

D

Right Option Id : 139003

Question 15

Question Id : 140

Directions: *Study the following information carefully to answer the question that follows.*

Six friends A, B, C, D, E and F are sitting around a round table planning a carnival. They are not necessarily sitting in the same order. All are facing inside. A is sitting second to the left of B. F is sitting opposite to the person who sits to the immediate right of D. B sits between E on one side and F on the other. D doesn't sit between A and E. The friend sitting next to F doesn't sit to the immediate right of E.

Who is sitting to the left of F?

Answer :

Option Id

(A) A — 140001
(B) B — 140002
(C) C — 140003
(D) Can't be determined — 140004

Right Answer :

Can't be determined

Right Option Id : 140004

Question 16

Question Id : 141

What is the name of combustible material at the tip of a safety match stick?

Answer :

Option Id

(A) Zinc — 141001
(B) Aluminium dioxide — 141002
(C) Nickel — 141003
(D) Antimony trisulphide — 141004

Right Answer :

Antimony trisulphide

Right Option Id : 141004

Question 17

Question Id : 142

Who among the following was the first Mughal emperor to allow Britishers to establish trade links with India?

Answer :

Option Id

(A) Akbar — 142001
(B) Jahangir — 142002
(C) Shah Jahan — 142003
(D) Aurangzeb — 142004

Right Answer : **Right Option Id : 142002**

Jahangir

Question 18 **Question Id : 143**

If any question arises whether a Bill is a Money Bill or not, the decision of the _____ thereon is final.

Answer : Option Id

(A) Lok Sabha Speaker 143001

(B) President of India 143002

(C) Finance Minister of India 143003

(D) None of these 143004

Right Answer : **Right Option Id : 143001**

Lok Sabha Speaker

Question 19 **Question Id : 144**

What do you understand by the term 'Mixed Economy'?

Answer : Option Id

(A) Co-existence of small scale and large scale industries. 144001

(B) Co-existence of the rich and the poor. 144002

(C) Co-existence of private and public sector. 144003

(D) Assigning equal importance to both agriculture and heavy industries. 144004

Right Answer : **Right Option Id : 144003**

Co-existence of private and public sector.

Question 20 **Question Id : 145**

Tides are the highest

Answer : Option Id

(A) when the Earth is at its nearest to the Sun. 145001

(B) when the Earth is at its nearest to the Moon. 145002

(C) in the spring season. 145003

(D) when the Sun, Moon and the Earth are in a straight line. 145004

Right Answer : **Right Option Id : 145004**

when the Sun

Moon and the Earth are in a straight line.

Question 21 **Question Id : 146**

Directions: *Study the following information to answer the question that follows.*

During mid-term selection examination events in a sports academy for three sports - Gymnastics, Football and Squash – 280 students appeared. When the results were declared, 185 students had passed in Gymnastics, 210 had passed in Football and 222 students had passed in Squash. Students who passed Football and Squash – 200. All those – except 5 students who passed in Gymnastics – passed in Football. All those – except 10 students who passed in Gymnastics – passed in Squash. 47 students failed in all 3 sports.

How many students passed in Squash only?

Answer : Option Id

(A) 18 146001

(B) 21 146002

(C) 25 146003

(D) 29 146004

Right Answer : **Right Option Id : 146001**

18

Question 22 **Question Id : 147**

Directions: *Study the following information to answer the question that follows.*

During mid-term selection examination events in a sports academy for three sports - Gymnastics, Football and Squash – 280 students appeared. When the results were declared, 185 students had passed in Gymnastics, 210 had passed in Football and 222 students had passed in Squash. Students who passed Football and Squash – 200. All those – except 5 students who passed in Gymnastics – passed in Football. All those – except 10 students who passed in Gymnastics – passed in Squash. 47 students failed in all 3 sports.

How many students passed in all 3 sports?

Answer : Option Id

(A) 185
(B) 175
(C) 170
(D) 171

147001
147002
147003
147004

Right Answer :
171

Right Option Id : 147004

Question 23 **Question Id : 148**

Directions: *Study the following information to answer the question that follows.*

During mid-term selection examination events in a sports academy for three sports - Gymnastics, Football and Squash – 280 students appeared. When the results were declared, 185 students had passed in Gymnastics, 210 had passed in Football and 222 students had passed in Squash. Students who passed Football and Squash – 200. All those – except 5 students who passed in Gymnastics – passed in Football. All those – except 10 students who passed in Gymnastics – passed in Squash. 47 students failed in all 3 sports.

How many students failed in Football and Gymnastics?

Answer :

Option Id

(A) 65
(B) 18
(C) 58
(D) 47

148001
148002
148003
148004

Right Answer :
65

Right Option Id : 148001

Question 24 **Question Id : 149**

Directions: *Study the following information to answer the question that follows.*

During mid-term selection examination events in a sports academy for three sports - Gymnastics, Football and Squash – 280 students appeared. When the results were declared, 185 students had passed in Gymnastics, 210 had passed in Football and 222 students had passed in Squash. Students who passed Football and Squash – 200. All those – except 5 students who passed in Gymnastics – passed in Football. All those – except 10 students who passed in Gymnastics – passed in Squash. 47 students failed in all 3 sports.

How many students passed in Gymnastics but failed in other two sports?

Answer :

Option Id

(A) 5
(B) 10
(C) 15
(D) 1

149001
149002
149003
149004

Right Answer :
1

Right Option Id : 149004

Question 25 **Question Id : 150**

Directions: *Study the following information to answer the question that follows.*

During mid-term selection examination events in a sports academy for three sports - Gymnastics, Football and Squash – 280 students appeared. When the results were declared, 185 students had passed in Gymnastics, 210 had passed in Football and 222 students had passed in Squash. Students who passed Football and Squash – 200. All those – except 5 students who passed in Gymnastics – passed in Football. All those – except 10 students who passed in Gymnastics – passed in Squash. 47 students failed in all 3 sports.

How many students got promoted to next level of training, if they have to pass at least two sports?

Answer :

Option Id

(A) 180
(B) 213
(C) 200
(D) 185

150001
150002
150003
150004

Right Answer :
213

Right Option Id : 150002

Part II - Technical

Question 26 **Question Id : 151**

What term refers to the equivalent resistance of a capacitor, which depends on the frequency and the value of the capacitor?

Answer :

Option Id

(A) Impedance
(B) Resistance

151001
151002

(C) Reactance
(D) Conductance

151003
151004

Right Answer :
Reactance

Right Option Id : 151003

Question 27

Question Id : 152

What type of signal has values that are completely specific for any given time?

Answer :

Option Id

(A) Random Signal — 152001
(B) Deterministic — 152002
(C) Periodic Signal — 152003
(D) Aperiodic Signal — 152004

Right Answer :
Deterministic

Right Option Id : 152002

Question 28

Question Id : 153

Which of the following types of complements is used in digital systems for simplifying subtraction and logical manipulation, and is calculated by subtracting 1 from the base before finding the complement?

Answer :

Option Id

(A) Radix complement — 153001
(B) Diminished radix complement — 153002
(C) Two's complement — 153003
(D) One's complement — 153004

Right Answer :
Diminished radix complement

Right Option Id : 153002

Question 29

Question Id : 154

In 2's complement representation, what does a signed number with a 1 in the sign bit and all 0's in the magnitude bits represent?

Answer :

Option Id

(A) -2^n, where n is the number of bits in the magnitude — 154001
(B) $-2^{(n-1)}$, where n is the number of bits in the magnitude — 154002
(C) $-2^{(n+1)}$, where n is the number of bits in the magnitude — 154003
(D) -1, regardless of the number of bits — 154004

Right Answer :
-2^n where n is the number of bits in the magnitude

Right Option Id : 154001

Question 30

Question Id : 155

What is it called when the positive terminal of a battery is connected to the cathode and the negative terminal to the anode?

Answer :

Option Id

(A) Forward Biasing — 155001
(B) Neutral Biasing — 155002
(C) Zero Biasing — 155003
(D) Reverse Biasing — 155004

Right Answer :
Reverse Biasing

Right Option Id : 155004

Question 31

Question Id : 156

Which of the following codes is reflective, where the code for one digit is the complement of the code for its pair (e.g., 9 and 0, 8 and 1)?

Answer :

Option Id

(A) 8421 Code — 156001
(B) 2421 Code — 156002
(C) Excess-3 Code — 156003
(D) 5211 Code — 156004

markstoall

Question 32 **Question Id : 157**

What is the process of efficiently converting the output of a source into a sequence of binary digits called?

Answer :

Option Id

(A) Source Encoder 157001

(B) Channel Encoder 157002

(C) Data Modulation 157003

(D) Signal Amplification 157004

Right Answer : **Right Option Id : 157001**

Source Encoder

Question 33 **Question Id : 158**

Which layer of the OSI model manages data packetization and delivery while checking for errors?

Answer :

Option Id

(A) Network Layer 158001

(B) Data Link Layer 158002

(C) Transport Layer 158003

(D) Application Layer 158004

Right Answer : **Right Option Id : 158003**

Transport Layer

Question 34 **Question Id : 159**

Which of the following is a weighted, sequential code used for mathematical operations, where each decimal digit is represented by a 4-bit binary number?

Answer :

Option Id

(A) 8421 BCD code 159001

(B) Excess-3 code 159002

(C) 2421 code 159003

(D) Gray code 159004

Right Answer : **Right Option Id : 159001**

8421 BCD code

Question 35 **Question Id : 160**

What are hard real-time systems characterized by?

Answer :

Option Id

(A) Delayed task execution with minor consequences 160001

(B) Execution of tasks without any specific deadlines 160002

(C) Missing a task deadline can result in catastrophic consequences 160003

(D) Tasks executed in a sequential manner without timing constraints 160004

Right Answer : **Right Option Id : 160003**

Missing a task deadline can result in catastrophic consequences

Question 36 **Question Id : 161**

Which code involves transmitting four data bits along with three parity bits, resulting in a 7-bit codeword?

Answer :

Option Id

(A) 8-bit Hamming code 161001

(B) 7-bit Hamming code 161002

(C) Parity bit code 161003

(D) ASCII code 161004

Right Answer : **Right Option Id : 161002**

7-bit Hamming code

Question 37 **Question Id : 162**

What is the primary function of a Mobile Telephone Switching Office (MTSO) in a cellular network?

Answer :

Option Id

(A) To manage call routing between cell towers 162001

(B) To serve as the central coordinating element for all cell sites 162002

(C) To provide Internet connectivity to mobile phones
(D) To store customer data and provide email services

162003
162004

Right Answer :
To serve as the central coordinating element for all cell sites

Right Option Id : 162002

Question 38

Question Id : 163

What is the formula for the voltage gain (AV) of a Common Emitter Amplifier (CEA) at high input frequencies when the bypass capacitor C2 shorts the emitter branch to the ground?

Answer :

Option Id

(A) AV = (RC //RL) / re
(B) AV = (RC // RL) / (RE + re)
(C) AV = RC / RL
(D) AV = re / RC

163001
163002
163003
163004

Right Answer :
AV = (RC //RL) / re

Right Option Id : 163001

Question 39

Question Id : 164

What is the formula for the bandwidth of a band-pass filter (BPF)?

Answer :

Option Id

(A) BW = ωc
(B) BW = ω2 - ω1
(C) BW = ω1 + ω2
(D) BW = ω1 / ω2

164001
164002
164003
164004

Right Answer :
BW = ω2 - ω1

Right Option Id : 164002

Question 40

Question Id : 165

What does it mean for a set to be closed with respect to a binary operator?

Answer :

Option Id

(A) Every pair of elements from the set produces a unique result within the set.
(B) Every pair of elements from the set produces an element outside the set.
(C) The set only contains even numbers.
(D) The binary operator can only be applied to elements of the set.

165001
165002
165003
165004

Right Answer :
Every pair of elements from the set produces a unique result within the set.

Right Option Id : 165001

Question 41

Question Id : 166

Which of the following expressions represents one of DeMorgan's Theorems?

Answer :

Option Id

(A) (a + b)' = a'b
(B) (a * b)' = a' + b'
(C) a + (b' * c) = (a + b') * (a + c)
(D) (a * b) = a + b

166001
166002
166003
166004

Right Answer :
(a * b)' = a' + b'

Right Option Id : 166002

Question 42

Question Id : 167

What is the circuit called that converts AC into pulsating DC using a single diode?

Answer :

Option Id

(A) Half wave Rectifier
(B) Full wave Rectifier
(C) Bridge Rectifier
(D) Voltage Regulator

167001
167002
167003
167004

Right Answer :
Half wave Rectifier

Right Option Id : 167001

Question 43 **Question Id : 168**

What is the primary role of an oscillator in a microcontroller?

Answer :

Option Id

(A) To regulate the voltage levels in the system 168001

(B) To provide a stable clock signal for controller operation 168002

(C) To manage memory operations 168003

(D) To process input signals 168004

Right Answer : **Right Option Id : 168002**

To provide a stable clock signal for controller operation

Question 44 **Question Id : 169**

What converts a binary sequence into electrical signals for transmission over a channel?

Answer :

Option Id

(A) Source Encoder 169001

(B) Channel Decoder 169002

(C) Signal Amplifier 169003

(D) Digital Modulator 169004

Right Answer : **Right Option Id : 169004**

Digital Modulator

Question 45 **Question Id : 170**

What does the Address Resolution Protocol (ARP) resolve?

Answer :

Option Id

(A) Network Interface layer address to Internet layer address 170001

(B) Internet layer address to Network Interface layer address 170002

(C) Application layer address to Transport layer address 170003

(D) Internet layer address to Application layer address 170004

Right Answer : **Right Option Id : 170002**

Internet layer address to Network Interface layer address

Question 46 **Question Id : 171**

Which pins are used for serial data transmission and reception in a microcontroller's serial port?

Answer :

Option Id

(A) TXD for reception and RXD for transmission 171001

(B) TXD for transmission and RXD for reception 171002

(C) SBUF for both transmission and reception 171003

(D) Port 1 for transmission and reception 171004

Right Answer : **Right Option Id : 171002**

TXD for transmission and RXD for reception

Question 47 **Question Id : 172**

What type of system schedules activities to follow a statically computed schedule?

Answer :

Option Id

(A) Event-triggered 172001

(B) Hard real-time 172002

(C) Soft real-time 172003

(D) Time-triggered 172004

Right Answer : **Right Option Id : 172004**

Time-triggered

Question 48 **Question Id : 173**

What is the function of pin 30 (ALE) in the 8051 microcontroller?

Answer :

Option Id

(A) It enables or disables external memory interfacing for the microcontroller. 173001

(B) It de-multiplexes the address and data signals of Port 0 for external memory interfacing. 173002

(C) It supplies +5V DC to the microcontroller for power.
(D) It acts as a general-purpose input/output pin for user applications.

Option Id
173003
173004

Right Answer : **Right Option Id : 173002**

It de-multiplexes the address and data signals of Port 0 for external memory interfacing.

Question 49 **Question Id : 174**

What causes severe fading in a mobile communication system?

Answer :

Option Id

(A) Higher antenna height — 174001
(B) Multipath waves generated by surrounding structures — 174002
(C) Increased carrier frequency wavelength — 174003
(D) Decreased antenna height and smaller carrier wavelength — 174004

Right Answer : **Right Option Id : 174004**

Decreased antenna height and smaller carrier wavelength

Question 50 **Question Id : 175**

Which theorem converts the internal capacitor CBC into the equivalent input and output capacitors Cin and Cout in a Common Emitter Amplifier (CEA)?

Answer :

Option Id

(A) Miller's Theorem — 175001
(B) Thevenin's Theorem — 175002
(C) Norton's Theorem — 175003
(D) Superposition Theorem — 175004

Right Answer : **Right Option Id : 175001**

Miller's Theorem

Question 51 **Question Id : 176**

What is the magnitude spectrum of a signal x(t) in the Fourier Transform?

Answer :

Option Id

(A) $|X(\omega)|$ — 176001
(B) $\phi(\omega)$ — 176002
(C) $X(\omega) * e^{(j\phi(\omega))}$ — 176003
(D) $X(\omega)$ — 176004

Right Answer : **Right Option Id : 176001**

$|X(\omega)|$

Question 52 **Question Id : 177**

Which section of the 8051 microcontroller contains bit-addressable locations where each bit has a unique address from 20H to 2FH?

Answer :

Option Id

(A) General-purpose RAM — 177001
(B) Special Function Registers (SFRs) — 177002
(C) Bit-addressable RAM from 20H to 2FH — 177003
(D) Register Banks from 00H to 1FH — 177004

Right Answer : **Right Option Id : 177003**

Bit-addressable RAM from 20H to 2FH

Question 53 **Question Id : 178**

What is the name of the eight-bit register in the 8051 microcontroller that provides the status of ALU operations and selects the register bank?

Answer :

Option Id

(A) Program Status Word (PSW) 178001

(B) Accumulator (A) 178002

(C) Stack Pointer (SP) 178003

(D) Data Pointer (DPTR) 178004

Right Answer : **Right Option Id : 178001**

Program Status Word (PSW)

Question 54 **Question Id : 179**

What is the maximum reverse voltage a diode can withstand under reverse biasing called?

Answer :

Option Id

(A) Reverse Breakdown Voltage 179001

(B) Peak Inverse Voltage 179002

(C) Threshold Voltage 179003

(D) Forward Voltage Drop 179004

markstoall

Question 55 **Question Id : 180**

Which flag in the 8051 microcontroller is used to indicate carry-out during addition/subtraction and is also set in certain Boolean operations?

Answer :

Option Id

(A) Overflow Flag 180001

(B) Parity Flag 180002

(C) Sign Flag 180003

(D) Carry Flag 180004

Right Answer : **Right Option Id : 180004**

Carry Flag

Question 56 **Question Id : 181**

What is the attenuation of high-frequency components in flat-top sampling due to the sinc pulse roll-off called?

Answer :

Option Id

(A) Aperture effect 181001

(B) Aliasing 181002

(C) Nyquist effect 181003

(D) Distortion 181004

Right Answer : **Right Option Id : 181001**

Aperture effect

Question 57 **Question Id : 182**

Which protocol reports errors and provides diagnostic information for unsuccessful packet delivery?

Answer :

Option Id

(A) IGMP 182001

(B) ICMP 182002

(C) ARP 182003

(D) TCP 182004

Right Answer : **Right Option Id : 182002**

ICMP

Question 58 **Question Id : 183**

Which bits in the Program Status Word (PSW) are used to select the register bank in the 8051 microcontroller?

Answer :

Option Id

(A) RS0 and RS1 in the Status Register 183001

(B) RS1 and RS2 in the Program Control Register 183002

(C) PSW.5 and PSW.6 in the PSW Register 183003

(D) PSW.3 (RS0) and PSW.4 (RS1) in the PSW 183004

Right Answer : **Right Option Id : 183004**

PSW.3 (RS0) and PSW.4 (RS1) in the PSW

Question 59 **Question Id : 184**

What does Mean Time Between Failure (MTBF) represent in system reliability?

Answer : Option Id

(A) The duration for system repair after failure 184001

(B) The time taken to detect a failure 184002

(C) The frequency of system failures in a given time frame 184003

(D) The total operational time of a system 184004

Right Answer : **Right Option Id : 184003**

The frequency of system failures in a given time frame

Question 60 **Question Id : 185**

What is the term for a discrete-time signal that is zero for negative time and has a constant magnitude starting from n=0?

Answer : Option Id

(A) Unit Step Sequence 185001

(B) Unit Impulse Sequence 185002

(C) Sinusoidal Sequence 185003

(D) Exponential Sequence 185004

Right Answer : **Right Option Id : 185001**

Unit Step Sequence

Question 61 **Question Id : 186**

What is the path called when the terrain contour blocks the direct wave path in a mobile radio environment?

Answer : Option Id

(A) Direct Wave Path 186001

(B) Line-of-Sight Path 186002

(C) Clear Path 186003

(D) Obstructive Path 186004

Right Answer : **Right Option Id : 186004**

Obstructive Path

Question 62 **Question Id : 187**

Which model uses the hybrid π equivalent circuit for analyzing transistors and is characterized by components whose values are independent of frequency?

Answer : Option Id

(A) Miller Model 187001

(B) Giacolleto Model 187002

(C) Hybrid Model 187003

(D) Thevenin Model 187004

Right Answer : **Right Option Id : 187002**

Giacolleto Model

Question 63 **Question Id : 188**

What is the correlation called when a signal is compared with its own shifted version to analyze its repetitive patterns?

Answer : Option Id

(A) Cross Correlation 188001

(B) Auto Correlation 188002

(C) Signal Matching 188003

(D) Phase Comparison 188004

Right Answer : **Right Option Id : 188002**

Auto Correlation

Question 64 **Question Id : 189**

In the time shifting operation of a discrete-time signal, represented by the equation y(n) = x(n - k), a positive value of k represents _____.

Answer :

Option Id

(A) Time advance (shift to the left) 189001

(B) No shift in the signal 189002

(C) Time delay (shift to the right) 189003

(D) Time scaling 189004

Right Answer : **Right Option Id : 189003**

Time delay (shift to the right)

Question 65 **Question Id : 190**

Which of the following types of signals exists for both positive and negative time intervals?

Answer :

Option Id

(A) Non-causal signals 190001

(B) Causal signals 190002

(C) Anti-causal signals 190003

(D) Unit step signals 190004

Right Answer : **Right Option Id : 190001**

Non-causal signals

Question 66 **Question Id : 191**

What is the term used for the ratio of the RMS value of the AC component to the DC value of the component in a rectifier circuit?

Answer :

Option Id

(A) Efficiency 191001

(B) Power Factor 191002

(C) Load Regulation 191003

(D) Ripple Factor 191004

Right Answer : **Right Option Id : 191004**

Ripple Factor

Question 67 **Question Id : 192**

Which of the following types of signals satisfies the condition x(n) = x(-n) for all n?

Answer :

Option Id

(A) Even (symmetric) signal 192001

(B) Odd (antisymmetric) signal 192002

(C) Causal signal 192003

(D) Non-causal signal 192004

Right Answer : **Right Option Id : 192001**

Even (symmetric) signal

Question 68 **Question Id : 193**

What is the process of converting continuous-amplitude samples into discrete-time signals called?

Answer :

Option Id

(A) Sampling 193001

(B) Encoding 193002

(C) Modulation 193003

(D) Quantization 193004

Right Answer : **Right Option Id : 193001**

Sampling

Question 69 **Question Id : 194**

What does ARP resolve in a broadcast-based network like Ethernet?

Answer :

Option Id

(A) IPv4 addresses to MAC addresses 194001

(B) MAC addresses to IPv4 addresses 194002

(C) IPv6 addresses to IPv4 addresses 194003

(D) MAC addresses to Application Layer addresses 194004

Right Answer :
IPv4 addresses to MAC addresses

Right Option Id : 194001

Question 70

Question Id : 195

Which property of a system ensures that a time shift in the input results in a corresponding time shift in the output?

Answer :

Option Id

(A) Shift-invariant system — 195001

(B) Time-varying system — 195002

(C) Linear system — 195003

(D) Non-linear system — 195004

Right Answer :
Shift-invariant system

Right Option Id : 195001

Question 71

Question Id : 196

Which unit in a computer system is represented by a silicon chip capable of performing arithmetic and logical operations?

Answer :

Option Id

(A) Memory — 196001

(B) Timer Unit — 196002

(C) Interrupt Controller — 196003

(D) Microprocessor — 196004

Right Answer :
Microprocessor

Right Option Id : 196004

Question 72

Question Id : 197

Which structure uses separate delays for input and output samples and requires more memory for realization in digital systems?

Answer :

Option Id

(A) Non-canonical structure — 197001

(B) Canonical form — 197002

(C) Direct form-II structure — 197003

(D) State-space representation — 197004

Right Answer :
Canonical form

Right Option Id : 197002

Question 73

Question Id : 198

Which of the following represents the ratio of the distance between the centers of two cells to the radius of the cell in co-channel interference reduction?

Answer :

Option Id

(A) q = D/R — 198001

(B) q = Pt/Pr — 198002

(C) q = A/B — 198003

(D) q = R/D — 198004

Right Answer :
q = D/R

Right Option Id : 198001

Question 74

Question Id : 199

Which coupling method uses a resistor-capacitor combination, where the capacitor allows AC signals to pass while blocking DC components?

Answer :

Option Id

(A) Direct Coupling — 199001

(B) Transformer Coupling — 199002

(C) Inductive Coupling — 199003

(D) Resistance-Capacitance Coupling — 199004

Right Answer :
Resistance-Capacitance Coupling

Right Option Id : 199004

Question 75 **Question Id : 200**

What is the range of complex variable values called where the Laplace Transform converges?

Answer :

Option Id

(A) Frequency Spectrum 200001

(B) Region of Convergence (ROC) 200002

(C) Signal Bandwidth 200003

(D) Laplace Domain 200004

Right Answer : **Right Option Id : 200002**

Region of Convergence (ROC)

Question 76 **Question Id : 201**

Which of the following structures uses fewer delay elements and introduces an intermediate variable to split the transfer function into poles and zeros?

Answer :

Option Id

(A) Direct Form-II Structure 201001

(B) Direct Form-I Structure 201002

(C) State-space representation 201003

(D) Cascade form structure 201004

Right Answer : **Right Option Id : 201001**

Direct Form-II Structure

Question 77 **Question Id : 202**

Which of the following devices is primarily used for backup storage in computer systems, providing large storage capacity at a low cost?

Answer :

Option Id

(A) Main memory 202001

(B) Cache memory 202002

(C) Auxiliary memory 202003

(D) Register memory 202004

Right Answer : **Right Option Id : 202003**

Auxiliary memory

Question 78 **Question Id : 203**

What is the mathematical expression for the transformer voltage in a half wave rectifier circuit?

Answer :

Option Id

(A) $v(t) = vm * \cos(\omega t)$ 203001

(B) $v(t) = vm * \sin(\omega t)$ 203002

(C) $v(t) = vm * e^{(-\omega t)}$ 203003

(D) $v(t) = vm * \tan(\omega t)$ 203004

Right Answer : **Right Option Id : 203002**

$v(t) = vm * \sin(\omega t)$

Question 79 **Question Id : 204**

Which technique involves partitioning memory into modules connected to common memory address and data buses to allow simultaneous access from multiple sources?

Answer :

Option Id

(A) Memory Interleaving 204001

(B) Pipelining 204002

(C) Multithreading 204003

(D) Memory Mapping 204004

Right Answer : **Right Option Id : 204001**

Memory Interleaving

Question 80 **Question Id : 205**

What is the minimum sampling rate required to avoid aliasing, as per the Nyquist theorem?

Answer :

Option Id

(A) fs = fm 205001

(B) fs = fm / 2 205002

(C) fs = 2fm
(D) fs = 3fm

205003
205004

Right Answer :
fs = 2fm

Right Option Id : 205003

Question 81

Question Id : 206

What is ADSL primarily designed for?

Answer :

Option Id

(A) Businesses requiring symmetric data rates — 206001
(B) Residential users with asymmetric data needs — 206002
(C) High-speed corporate networks — 206003
(D) Cable TV internet access — 206004

Right Answer :
Residential users with asymmetric data needs

Right Option Id : 206002

Question 82

Question Id : 207

Which of the following refers to the situation where a read or write operation is performed on the cache, and the requested word is already present in the cache?

Answer :

Option Id

(A) Cache Miss — 207001
(B) Cache Hits — 207002
(C) Cache Overflow — 207003
(D) Cache Write-through — 207004

Right Answer :
Cache Hits

Right Option Id : 207002

Question 83

Question Id : 208

Which silicon chip contains a CPU, RAM, ROM/FLASH, timers, interrupt controllers, and dedicated I/O ports, making it suitable for embedded systems?

Answer :

Option Id

(A) Microprocessor — 208001
(B) Memory Controller — 208002
(C) Input/Output Controller — 208003
(D) Microcontroller — 208004

Right Answer :
Microcontroller

Right Option Id : 208004

Question 84

Question Id : 209

In asynchronous serial transfer, which of the following describes the structure of each character being transmitted?

Answer :

Option Id

(A) A start bit, character bits, and a stop bit — 209001
(B) A parity bit, character bits, and a checksum — 209002
(C) Start bit, data bits, and error-correction bits — 209003
(D) Data bits, acknowledgement bit, and end-of-transmission signal — 209004

Right Answer :
A start bit character bits and a stop bit

Right Option Id : 209001

Question 85

Question Id : 210

What does the unit 'Erlangs' measure in telecommunications?

Answer :

Option Id

(A) The time utilization of a single or multiple channels — 210001
(B) The signal strength in a communication channel — 210002
(C) The frequency spectrum of the signal — 210003
(D) The data transfer rate of a channel — 210004

Right Answer :
The time utilization of a single or multiple channels

Right Option Id : 210001

Question 86 **Question Id : 211**

What term refers to connecting amplifier stages directly without DC isolation, typically used when the load is connected in series?

Answer :

Option Id

(A) Impedance Coupling — 211001

(B) Resistance-Capacitance Coupling — 211002

(C) Direct Coupling — 211003

(D) Transformer Coupling — 211004

Right Answer : **Right Option Id : 211003**

Direct Coupling

Question 87 **Question Id : 212**

What is the mathematical expression for the even component of a signal?

Answer :

Option Id

(A) x_even(t) = x(t) * x(-t) — 212001

(B) x_even(t) = 1/2 [x(t) + x(-t)] — 212002

(C) x_even(t) = x(t) - x(-t) — 212003

(D) x_even(t) = x(t) + x(-t) — 212004

Right Answer : **Right Option Id : 212002**

x_even(t) = 1/2 [x(t) + x(-t)]

Question 88 **Question Id : 213**

Which method of asynchronous data transfer uses a single control line to time each transfer?

Answer :

Option Id

(A) Handshaking — 213001

(B) Parity control — 213002

(C) Clock synchronization — 213003

(D) Strobe Control Method — 213004

Right Answer : **Right Option Id : 213004**

Strobe Control Method

Question 89 **Question Id : 214**

Which of the following methods involves the source unit generating a "data valid" signal to initiate data transfer and the destination unit generating a "data accepted" signal after accepting the data?

Answer :

Option Id

(A) Source-initiated handshaking — 214001

(B) Clock synchronization — 214002

(C) Strobe control — 214003

(D) Parallel data transfer — 214004

Right Answer : **Right Option Id : 214001**

Source-initiated handshaking

Question 90 **Question Id : 215**

What is the formula for the discharging time constant of a capacitor in a half-wave rectifier with a capacitor filter?

Answer :

Option Id

(A) Td = C / V — 215001

(B) Td = C * R_L — 215002

(C) Td = C + R_L — 215003

(D) Td = C * V — 215004

Right Answer : **Right Option Id : 215002**

Td = C * R_L

Question 91 **Question Id : 216**

Which of the following DMA transfer modes requires the DREQ signal to remain active throughout the operation, with the transfer continuing when the DREQ signal goes high again?

Answer :

Option Id

(A) Hidden mode — 216001

(B) Demand transfer mode
(C) Block transfer mode
(D) Cycle stealing mode

216002
216003
216004

Right Answer :
Demand transfer mode

Right Option Id : 216002

Question 92

Question Id : 217

What is the minimum sampling rate required to recover a band-pass signal with a bandwidth of 2fm?

Answer :

Option Id

(A) fs = 2fm
(B) fs = 4fm
(C) fs = fm
(D) fs = fm/2

217001
217002
217003
217004

Right Answer :
fs = 4fm

Right Option Id : 217002

Question 93

Question Id : 218

What transmission media handles communication between offices using multiplexing?

Answer :

Option Id

(A) Switches
(B) Trunks
(C) Routers
(D) Hubs

218001
218002
218003
218004

Right Answer :
Trunks

Right Option Id : 218002

Question 94

Question Id : 219

In control systems, what is defined as the deviation of the response at peak time from the final value of the response?

Answer :

Option Id

(A) Peak overshoot
(B) Settling time
(C) Rise time
(D) Steady-state error

219001
219002
219003
219004

Right Answer :
Peak overshoot

Right Option Id : 219001

Question 95

Question Id : 220

Which processor architecture uses a single bus to fetch both instructions and data from a common memory?

Answer :

Option Id

(A) Von-Neumann
(B) Harvard
(C) RISC
(D) CISC

220001
220002
220003
220004

Right Answer :
Von-Neumann

Right Option Id : 220001

Question 96

Question Id : 221

Which of the following terms refers to the deviation of the output of a control system from the desired response during steady state?

Answer :

Option Id

(A) Rise time
(B) Peak overshoot
(C) Steady state error
(D) Settling time

221001
221002
221003
221004

Right Answer :
Steady state error

Right Option Id : 221003

Question 97 **Question Id : 222**

What does 'load' measure in a trunked radio system?

Answer :

Option Id

(A) The probability of a call being delayed — 222001

(B) The number of active calls in the system — 222002

(C) The traffic intensity across the entire system, measured in Erlangs — 222003

(D) The call drop rate in the system — 222004

Right Answer : **Right Option Id : 222003**

The traffic intensity across the entire system measured in Erlangs

Question 98 **Question Id : 223**

What component is connected in parallel to the emitter resistor to provide a low reactance path for the amplified AC signal and prevent voltage feedback to the input?

Answer :

Option Id

(A) Emitter By-pass Capacitor (C_e) — 223001

(B) Bypass Resistor — 223002

(C) Coupling Capacitor — 223003

(D) Feedback Capacitor — 223004

Right Answer : **Right Option Id : 223001**

Emitter By-pass Capacitor (C_e)

Question 99 **Question Id : 224**

What is the mathematical condition for the periodicity of a discrete signal?

Answer :

Option Id

(A) $x[n \pm mN] = x(n)$ — 224001

(B) $x[n \pm mT] = x(n)$ — 224002

(C) $x[n + N] = x(n) - N$ — 224003

(D) $x[n] = x(n) + mT$ — 224004

Right Answer : **Right Option Id : 224001**

$x[n \pm mN] = x(n)$

Question 100 **Question Id : 225**

Which type of system is described as having a constant amplitude and frequency of oscillations for bounded input, and is stable when its poles are located on the imaginary axis?

Answer :

Option Id

(A) Marginally Stable System — 225001

(B) Stable System — 225002

(C) Unstable System — 225003

(D) Asymptotically Stable System — 225004

Right Answer : **Right Option Id : 225001**

Marginally Stable System

Question 101 **Question Id : 226**

Which of the following stability criteria provides both a necessary condition and a sufficient condition to determine the stability of a control system?

Answer :

Option Id

(A) Routh-Hurwitz Stability Criterion — 226001

(B) Nyquist Criterion — 226002

(C) Bode Stability Criterion — 226003

(D) Root Locus Criterion — 226004

Right Answer : **Right Option Id : 226001**

Routh-Hurwitz Stability Criterion

Question 102 **Question Id : 227**

What is the name of the oscillator circuit that uses an amplifier and an LC circuit as a feedback mechanism?

Answer :

Option Id

(A) Colpitts Oscillator — 227001

(B) Hartley Oscillator
(C) Wien Bridge Oscillator
(D) Crystal Oscillator

227002
227003
227004

Right Answer :
Hartley Oscillator

Right Option Id : 227002

Question 103 **Question Id : 228**

Which method allows for determining the stability of a control system without calculating the roots of the characteristic equation, by using the sign changes in the first column of the Routh table?

Answer :

Option Id

(A) Routh array method
(B) Root locus method
(C) Bode plot method
(D) Nyquist criterion

228001
228002
228003
228004

Right Answer :
Routh array method

Right Option Id : 228001

Question 104 **Question Id : 229**

What is the process of compressing a signal before quantization and expanding it after reception called?

Answer :

Option Id

(A) Quantization
(B) Companding
(C) Encoding
(D) Modulation

229001
229002
229003
229004

Right Answer :
Companding

Right Option Id : 229002

Question 105 **Question Id : 230**

What does the receiver send when it receives a damaged or duplicate frame?

Answer :

Option Id

(A) ACK
(B) NACK
(C) SYN
(D) FIN

230001
230002
230003
230004

Right Answer :
NACK

Right Option Id : 230002

Question 106 **Question Id : 231**

Which technique uses an open-loop transfer function to determine the stability of the closed-loop control system by observing the path of the closed-loop poles?

Answer :

Option Id

(A) Root locus technique
(B) Bode plot method
(C) Nyquist criterion
(D) Routh-Hurwitz criterion

231001
231002
231003
231004

Right Answer :
Root locus technique

Right Option Id : 231001

Question 107 **Question Id : 232**

Which type of logic devices allow users to define and modify their functionality after manufacturing?

Answer :

Option Id

(A) Fixed Logic Devices — 232001

(B) Hardwired Logic Devices — 232002

(C) Standard Logic Devices — 232003

(D) Programmable Logic Devices (PLDs) — 232004

Right Answer : **Right Option Id : 232004**

Programmable Logic Devices (PLDs)

Question 108 **Question Id : 233**

Which conditions are used to identify the points on the root locus branches, where the angle condition ensures the angle of the open-loop transfer function is an odd multiple of 180°?

Answer :

Option Id

(A) Stability Condition and Phase Condition — 233001

(B) Phase Condition and Gain Condition — 233002

(C) Root Locus Condition and Frequency Condition — 233003

(D) Angle Condition and Magnitude Condition — 233004

Right Answer : **Right Option Id : 233004**

Angle Condition and Magnitude Condition

Question 109 **Question Id : 234**

Which term refers to the scheme that allocates spectrum efficiency in real-time and adjusts cell sites based on traffic conditions?

Answer :

Option Id

(A) Static Cell Allocation — 234001

(B) Frequency Reuse — 234002

(C) Dynamic Splitting — 234003

(D) Fixed Spectrum Allocation — 234004

Right Answer : **Right Option Id : 234003**

Dynamic Splitting

Question 110 **Question Id : 235**

What term refers to a circuit consisting of two emitter follower stages in cascade with infinite emitter resistance in the first stage?

Answer :

Option Id

(A) Differential Amplifier — 235001

(B) Darlington Pair — 235002

(C) Common-Emitter Amplifier — 235003

(D) Voltage Follower — 235004

Right Answer : **Right Option Id : 235002**

Darlington Pair

Question 111 **Question Id : 236**

What is the condition for a system to be BIBO stable?

Answer :

Option Id

(A) $|y| \leq |x|$ — 236001

(B) $|y| \leq k2$ for $|x| \leq k$ — 236002

(C) $|y| > k2$ for $|x| \leq k$ — 236003

(D) $|y| \geq k2 + k$ — 236004

Right Answer : **Right Option Id : 236002**

$|y| \leq k2$ for $|x| \leq k$

Question 112 **Question Id : 237**

Under which condition is a two-port network considered reciprocal, where the ratio of the output response variable to the input excitation variable remains the same when the excitation and response ports are interchanged?

Answer :

Option Id

(A) Symmetry Condition — 237001

(B) Reciprocity Condition — 237002

(C) Voltage Matching Condition
(D) Current Condition

237003
237004

Right Answer :
Reciprocity Condition

Right Option Id : 237002

Question 113

Question Id : 238

A direct route to obtaining the characteristic equation from the general first-order differential equation a(df/dt) + bf = 0 results in which of the following equations?

Answer :

Option Id

(A) as + b = 0
(B) $as^2 + b = 0$
(C) a + b = 0
(D) $a^{2s} + b = 0$

238001
238002
238003
238004

Right Answer :
as + b = 0

Right Option Id : 238001

Question 114

Question Id : 239

What are the majority charge carriers in an N-channel JFET?

Answer :

Option Id

(A) Holes
(B) Electrons
(C) Ions
(D) Protons

239001
239002
239003
239004

Right Answer :
Electrons

Right Option Id : 239002

Question 115

Question Id : 240

What term is represented by ω_0 in the equation s1, s2 = $-R/(2L) \pm \sqrt{((R/(2L))^2 - 1/LC)} = -\alpha \pm \sqrt{(\alpha^2 - \omega_0^2)}$, where $\alpha = R/(2L)$ and $\omega_0 = 1/\sqrt{(LC)}$?

Answer :

Option Id

(A) Damping coefficient
(B) Natural frequency
(C) Resonant frequency
(D) Exponential decay

240001
240002
240003
240004

Right Answer :
Resonant frequency

Right Option Id : 240003

Question 116

Question Id : 241

What is the process of representing digital 1s and 0s on a transmission link called?

Answer :

Option Id

(A) Modulation
(B) Companding
(C) Line Coding
(D) Quantization

241001
241002
241003
241004

Right Answer :
Line Coding

Right Option Id : 241003

Question 117

Question Id : 242

In the Go-Back-N protocol, what happens when the receiver gets a sequence number it is not expecting?

Answer :

Option Id

(A) It sends an ACK for the received sequence number.
(B) It processes the out-of-order sequence silently.
(C) It silently ignores the unexpected sequence number.
(D) It requests a retransmission of the unexpected sequence.

242001
242002
242003
242004

Right Answer :
It silently ignores the unexpected sequence number.

Right Option Id : 242003

Question 118 **Question Id : 243**

What term describes how well a series RLC circuit responds to its resonant frequency while rejecting all other frequencies, and is directly proportional to the Q factor?

Answer : Option Id

(A) Selectivity 243001

(B) Bandwidth 243002

(C) Quality factor 243003

(D) Resonance 243004

Right Answer : **Right Option Id : 243001**

Selectivity

Question 119 **Question Id : 244**

What type of programmable logic device combines features of both PALs and FPGAs, offering up to about 10,000 gates?

Answer : Option Id

(A) FPGA 244001

(B) PAL 244002

(C) ASIC 244003

(D) CPLD 244004

Right Answer : **Right Option Id : 244004**

CPLD

Question 120 **Question Id : 245**

In the context of the parallel RLC circuit, what is the term for the reciprocal of impedance, which is related to the frequency at which resonance occurs?

Answer : Option Id

(A) Impedance 245001

(B) Reactance 245002

(C) Resistance 245003

(D) Admittance 245004

Right Answer : **Right Option Id : 245004**

Admittance

Question 121 **Question Id : 246**

Which technique improves capacity by reducing the D/R ratio and increasing frequency reuse, while maintaining the cell radius unchanged?

Answer : Option Id

(A) Cell Splitting 246001

(B) Frequency Reuse 246002

(C) Sectoring 246003

(D) Dynamic Splitting 246004

Right Answer : **Right Option Id : 246003**

Sectoring

Question 122 **Question Id : 247**

What type of power amplifier operates with the collector current flowing for less than half of the input signal's cycle?

Answer : Option Id

(A) Class C Power Amplifier 247001

(B) Class A Power Amplifier 247002

(C) Class B Power Amplifier 247003

(D) Class AB Power Amplifier 247004

Right Answer : **Right Option Id : 247001**

Class C Power Amplifier

Question 123 **Question Id : 248**

What is the system function H(s) defined as in a relaxed LTI system?

Answer : Option Id

(A) H(s) = X(s) / Y(s) 248001

(B) H(s) = Y(s) / X(s) 248002

(C) H(s) = X(s) * Y(s)

(D) H(s) = Y(s) + X(s)

248003

248004

Right Answer :

H(s) = Y(s) / X(s)

Right Option Id : 248002

Question 124

Question Id : 249

Which law states that the line integral of the magnetic field intensity H around a closed magnetic path is equal to the total current enclosed by the path?

Answer :

Option Id

(A) Ampere's Law

(B) Fleming's Right Hand Rule

(C) Ohm's Law

(D) Faraday's Law

249001

249002

249003

249004

Right Answer :

Ampere's Law

Right Option Id : 249001

Question 125

Question Id : 250

Which rule is used to determine the direction of magnetic flux in a current-carrying conductor, where the curled fingers show the direction of current and the thumb indicates the direction of flux flow?

Answer :

Option Id

(A) Right hand curl rule

(B) Fleming's Left Hand Rule

(C) Ampere's Rule

(D) Lenz's Law

250001

250002

250003

250004

Right Answer :

Right hand curl rule

Right Option Id : 250001