SSB SI

Previous Year Paper
(Communication)
22 Jan, 2024

भारत सरकार
गृह मंत्रालय
महानिदेशक कार्यालय, सशस्त्र सीमा बल
ईस्ट ब्लॉक -5,आर.के.पुरम -1,नई दिल्ली -66
वेबसाइट: -www.ssbrectt.gov.in

Government of India
Ministry of Home Affairs
Office of the Director General
Sashastra Seema Bal
East Block-V, R.K.Puram -1
New Delhi-66
Website: - www.ssbrectt.gov.in

Participant ID	
Participant Name	
Test Center Name	
Test Date	22/01/2024
Test Time	2:00 PM - 5:00 PM
Subject	SI (Communication)

Section : **General Knowledge**

Q.1 **निम्नलिखित में से कौन सा शब्द भारतीय संविधान की प्रस्तावना में उसके मूल रूप में मौजूद नहीं था?**

Ans
✗ 1. गणतंत्र
✓ 2. समाजवादी
✗ 3. सार्वभौम
✗ 4. स्वतंत्रता

Question ID : **630680561342**
Option 1 ID : **6306802194324**
Option 2 ID : **6306802194322**
Option 3 ID : **6306802194321**
Option 4 ID : **6306802194323**
Status : **Answered**
Chosen Option : **1**

Q.2 **गाद के जमाव के कारण नदियाँ अपने निचले मार्ग में कई चैनलों में विभाजित हो जाती हैं। इन चैनलों को _____ के नाम से जाना जाता है।**

Ans
✓ 1. वितरिका
✗ 2. भाबर
✗ 3. दोआब
✗ 4. सहायिका

Question ID : **630680561340**
Option 1 ID : **6306802194313**
Option 2 ID : **6306802194316**
Option 3 ID : **6306802194315**
Option 4 ID : **6306802194314**
Status : **Answered**
Chosen Option : **1**

Q.3 On which of the following dates, during World War II, did the United States attack Japan for the first time using the atomic bomb?

Ans
✔ 1. August 6, 1945
✘ 2. August 10, 1945
✘ 3. August 7, 1945
✘ 4. August 5, 1945

Question ID : **630680561337**
Option 1 ID : **6306802194301**
Option 2 ID : **6306802194304**
Option 3 ID : **6306802194302**
Option 4 ID : **6306802194303**
Status : **Answered**
Chosen Option : **1**

Q.4 What is PM- PRANAM yojana launched in the year 2023?

Ans
✔ 1. Promotes balanced use of fertilisers in farming
✘ 2. Promotes micro-credit loans for farming
✘ 3. Promotes micro-irrigation in farming
✘ 4. Promotes solar electricity for farming

Question ID : **630680561333**
Option 1 ID : **6306802194285**
Option 2 ID : **6306802194288**
Option 3 ID : **6306802194286**
Option 4 ID : **6306802194287**
Status : **Answered**
Chosen Option : **2**

Q.5 Who among the following leader formed Hindustan Socialist Republican Association in 1928?

Ans
✘ 1. Subhash Chandra Bose
✔ 2. Chandra Sekhar Azad
✘ 3. Moti Lal Nehru
✘ 4. Bal Gangadhar Tilak

Question ID : **630680561336**
Option 1 ID : **6306802194298**
Option 2 ID : **6306802194299**
Option 3 ID : **6306802194297**
Option 4 ID : **6306802194300**
Status : **Answered**
Chosen Option : **1**

Q.6 **Which among the following is reffered to as broader measure of money supply in India?**

Ans
✗ 1. M_2
✗ 2. M_4
✗ 3. M_1
✓ 4. M_3

Question ID : **630680561335**
Option 1 ID : **6306802194295**
Option 2 ID : **6306802194293**
Option 3 ID : **6306802194294**
Option 4 ID : **6306802194296**
Status : **Answered**
Chosen Option : **4**

Q.7 **Which of the following is the name of Chandrayaan-3's lander?**

Ans
✗ 1. Arunodaya
✗ 2. schedule
✗ 3. Agastya
✓ 4. Vikram

Question ID : **630680561332**
Option 1 ID : **6306802194284**
Option 2 ID : **6306802194283**
Option 3 ID : **6306802194281**
Option 4 ID : **6306802194282**
Status : **Answered**
Chosen Option : **4**

Q.8 **भारत का संविधान संघ की कार्यकारी शक्ति औपचारिक रूप से निम्नलिखित में से किसमें निहित करता है?**

Ans
✗ 1. मंत्रियों की परिषद
✗ 2. प्रधानमंत्री
✗ 3. भारत के मुख्य न्यायाधीश
✓ 4. राष्ट्रपति

Question ID : **630680561343**
Option 1 ID : **6306802194327**
Option 2 ID : **6306802194326**
Option 3 ID : **6306802194328**
Option 4 ID : **6306802194325**
Status : **Answered**
Chosen Option : **4**

Q.9 Mahesh Bhupati is associated with which of the following sports?

Ans

✗ 1. Table Tennis

✗ 2. Snooker

✓ 3. Lawn Tennis

✗ 4. Cricket

Question ID : **630680561344**
Option 1 ID : **6306802194331**
Option 2 ID : **6306802194329**
Option 3 ID : **6306802194332**
Option 4 ID : **6306802194330**
Status : **Answered**
Chosen Option : **1**

Q.10 Which one of the following is not a language spoken in Southern India?

Ans

✗ 1. Kannada

✗ 2. Telugu

✗ 3. Tamil

✓ 4. Bhojpuri

Question ID : **630680561338**
Option 1 ID : **6306802194307**
Option 2 ID : **6306802194306**
Option 3 ID : **6306802194305**
Option 4 ID : **6306802194308**
Status : **Answered**
Chosen Option : **4**

Q.11 The festival of Lohri is mainly related to which Indian state?

Ans

✗ 1. tamilnadu

✓ 2. Punjab

✗ 3. Karnataka

✗ 4. Kerala

Question ID : **630680561339**
Option 1 ID : **6306802194311**
Option 2 ID : **6306802194310**
Option 3 ID : **6306802194312**
Option 4 ID : **6306802194309**
Status : **Answered**
Chosen Option : **2**

Q.12 **In which of the following states, seed farm is declared as first carbon neutral farm?**

Ans

✗ 1. Maharashtra

✓ 2. Kerala

✗ 3. Tamil Nadu

✗ 4. Sikkim

Question ID : **630680561334**
Option 1 ID : **6306802194291**
Option 2 ID : **6306802194290**
Option 3 ID : **6306802194289**
Option 4 ID : **6306802194292**
Status : **Answered**
Chosen Option : **2**

Q.13 **निम्नलिखित में से कौन सा विश्व का सबसे व्यस्त समुद्री मार्ग है?**

Ans

✓ 1. उत्तर-अटलांटिक समुद्री मार्ग

✗ 2. उत्तर-प्रशांत समुद्री मार्ग

✗ 3. दक्षिणी अटलांटिक समुद्री मार्ग

✗ 4. भूमध्यसागरीय-हिन्द महासागर समुद्री मार्ग

Question ID : **630680561341**
Option 1 ID : **6306802194318**
Option 2 ID : **6306802194320**
Option 3 ID : **6306802194319**
Option 4 ID : **6306802194317**
Status : **Answered**
Chosen Option : **1**

Section : **Mathematics**

Q.1 A sum of ₹ 35000 will become ₹ 41000 in 48 months at some rate of simple interest. Find the rate of interest per annum.

Ans

✓ 1. 4.29%

✗ 2. 3.67%

✗ 3. 6.67%

✗ 4. 2.58%

Question ID : **630680561346**
Option 1 ID : **6306802194339**
Option 2 ID : **6306802194338**
Option 3 ID : **6306802194340**
Option 4 ID : **6306802194337**
Status : **Answered**
Chosen Option : **1**

Q.2 The value of 23.23 – 24.24 + 25.25 is:

Ans
✗ 1. 25.25
✗ 2. 26.26
✗ 3. 23.23
✓ 4. 24.24

Question ID : **630680561350**
Option 1 ID : **6306802194355**
Option 2 ID : **6306802194356**
Option 3 ID : **6306802194353**
Option 4 ID : **6306802194354**
Status : **Answered**
Chosen Option : **4**

Q.3 The difference between 18% of 1700 and 18% of 3700 is.

Ans
✗ 1. 306
✗ 2. 380
✗ 3. 390
✓ 4. 360

Question ID : **630680561351**
Option 1 ID : **6306802194357**
Option 2 ID : **6306802194359**
Option 3 ID : **6306802194360**
Option 4 ID : **6306802194358**
Status : **Answered**
Chosen Option : **4**

Q.4 Which of the following number is divisible by 9?

Ans
✗ 1. 4523
✓ 2. 4950
✗ 3. 5524
✗ 4. 6479

Question ID : **630680561348**
Option 1 ID : **6306802194345**
Option 2 ID : **6306802194346**
Option 3 ID : **6306802194347**
Option 4 ID : **6306802194348**
Status : **Answered**
Chosen Option : **2**

Q.5 एक लंब वृत्तीय शंकु की तिरछी ऊंचाई 15 से.मी. है और आधार का क्षेत्रफल 144π से.मी.^{2} है। शंकु का आयतन (से.मी.^{3} में) ज्ञात कीजिए।

Ans
1. ✗ 245 π से.मी.^{3}
2. ✓ 432 π से.मी.^{3}
3. ✗ 134 π से.मी.^{3}
4. ✗ 368 π से.मी.^{3}

Question ID : **630680561357**
Option 1 ID : **6306802194382**
Option 2 ID : **6306802194384**
Option 3 ID : **6306802194381**
Option 4 ID : **6306802194383**
Status : **Answered**
Chosen Option : **2**

Q.6 A boy covers 28% of the total distance by car, 22% by bike, 25% by bus and remaining 120 km is covered by cycle. Find the total distance covered by the boy. (in km)

Ans
1. ✓ 480 km
2. ✗ 525 km
3. ✗ 735 km
4. ✗ 625 km

Question ID : **630680561356**
Option 1 ID : **6306802194377**
Option 2 ID : **6306802194378**
Option 3 ID : **6306802194380**
Option 4 ID : **6306802194379**
Status : **Answered**
Chosen Option : **1**

Q.7 A TV was bought for ₹ 48,000. The value of the TV was depreciated by 5% per annum. Find the value of the TV after 3 years. (Depreciation means the reduction of value due to use and age of the item)

Ans
1. ✗ ₹ 37892
2. ✗ ₹ 38798
3. ✗ ₹ 39889
4. ✓ ₹ 41154

Question ID : **630680561347**
Option 1 ID : **6306802194344**
Option 2 ID : **6306802194343**
Option 3 ID : **6306802194342**
Option 4 ID : **6306802194341**
Status : **Answered**
Chosen Option : **4**

Q.8 A alone can do a piece of work in 12 days and B alone in 16 days. A and B undertook to do it for ₹ 5760. With the help of C, they completed the work in 6 days. How much is to be paid to C?

Ans

✗ 1. ₹ 400

✓ 2. ₹ 720

✗ 3. ₹ 810

✗ 4. ₹ 640

Question ID : **630680561355**
Option 1 ID : **6306802194373**
Option 2 ID : **6306802194375**
Option 3 ID : **6306802194376**
Option 4 ID : **6306802194374**
Status : **Answered**
Chosen Option : **3**

Q.9 Two bicycles were sold for ₹ 4820 each, gaining 6% on one and losing 6% on the other. The gain or loss percent on the whole transaction is

Ans

✗ 1. 3.6% gain

✗ 2. 0.36% gain

✗ 3. 3.6% loss

✓ 4. 0.36% loss

Question ID : **630680561352**
Option 1 ID : **6306802194363**
Option 2 ID : **6306802194362**
Option 3 ID : **6306802194361**
Option 4 ID : **6306802194364**
Status : **Answered**
Chosen Option : **4**

Q.10 If a : b = 2 : 4, b : c = 3 : 5 and c : d = 4 : 7,then find a : b : c : d.

Ans

✗ 1. 5 : 13 : 22 : 35

✗ 2. 7 : 11 : 18 : 30

✗ 3. 4 : 10 : 15 : 35

✓ 4. 6 : 12 : 20 : 35

Question ID : **630680561354**
Option 1 ID : **6306802194372**
Option 2 ID : **6306802194371**
Option 3 ID : **6306802194370**
Option 4 ID : **6306802194369**
Status : **Answered**
Chosen Option : **4**

Q.11 There is a 10% discount on a dozen pairs of trousers marked at ₹ 18000. How many pair of trousers can be bought with ₹ 4050?

Ans

✗ 1. 4

✓ 2. 3

✗ 3. 5

✗ 4. 2

Question ID : **630680561353**
Option 1 ID : **6306802194367**
Option 2 ID : **6306802194366**
Option 3 ID : **6306802194368**
Option 4 ID : **6306802194365**
Status : **Answered**
Chosen Option : **2**

Q.12 Which of the following is the unit digit in the product of $\{(531)^{491} x (735)^{317} x (7284)^{1793}\}$?

Ans

✗ 1. 2

✓ 2. 0

✗ 3. 1

✗ 4. 3

Question ID : **630680561349**
Option 1 ID : **6306802194351**
Option 2 ID : **6306802194349**
Option 3 ID : **6306802194350**
Option 4 ID : **6306802194352**
Status : **Answered**
Chosen Option : **2**

Q.13 The average weight of Prakash and his three friends is 52 kg. If Prakash is 3 kg more than the average weight of his three friends, what is Prakash's weight (in kg)?

Ans

✗ 1. 51.25 kg

✓ 2. 54.25 kg

✗ 3. 42.25 kg

✗ 4. 45.25 kg

Question ID : **630680561345**
Option 1 ID : **6306802194335**
Option 2 ID : **6306802194336**
Option 3 ID : **6306802194333**
Option 4 ID : **6306802194334**
Status : **Answered**
Chosen Option : **2**

Section : **Reasoning**

Q.1 If 'A' means ' multiplied by'', 'B' means 'division', 'C' means 'minus' and 'D' means ''plus'' ', then what will be the vahie of following expression?

6 A 6 C 20 B 2 D 5 = ?

Ans

✗ 1. 19

✓ 2. 31

✗ 3. 15

✗ 4. 26

Question ID : **630680561369**
Option 1 ID : **6306802194430**
Option 2 ID : **6306802194432**
Option 3 ID : **6306802194429**
Option 4 ID : **6306802194431**
Status : **Answered**
Chosen Option : **2**

Q.2 How many numbers are there in the series which are succeeded by symbols?

M # 4 % V 2 H ! D 6 # K 3 S ! D 7 N # 9 D # 6 J 2 @ V S

Ans

✗ 1. 5

✓ 2. 3

✗ 3. 4

✗ 4. 6

Question ID : **630680561363**
Option 1 ID : **6306802194407**
Option 2 ID : **6306802194405**
Option 3 ID : **6306802194406**
Option 4 ID : **6306802194408**
Status : **Answered**
Chosen Option : **2**

Q.3 What will come in the place of question marks (??) to make the following series logically complete?

CE , GI, KM , OQ , SU , ??

Ans

✗ 1. ZY

✓ 2. WY

✗ 3. YZ

✗ 4. YW

Question ID : **630680561362**
Option 1 ID : **6306802194404**
Option 2 ID : **6306802194402**
Option 3 ID : **6306802194403**
Option 4 ID : **6306802194401**
Status : **Answered**
Chosen Option : **2**

Q.4 Which of the following option closely resembles the following mirror image PAINTED?

PAINTED

(1) DƎTNIAd (2) DƎTNIAd

(3) DƎTИIAd (4) DETNIAd

Ans

✗ 1. 4

✓ 2. 2

✗ 3. 1

✗ 4. 3

Question ID : **630680561366**
Option 1 ID : **6306802194420**
Option 2 ID : **6306802194418**
Option 3 ID : **6306802194417**
Option 4 ID : **6306802194419**
Status : **Answered**
Chosen Option : **2**

Q.5 What will come in place of the question marks (?) to make the series given below logically complete?

31, 38, 35, 42, 39, 46, ?

Ans

✗ 1. 55

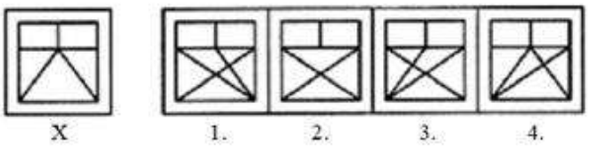
✓ 2. 43

✗ 3. 51

✗ 4. 50

Question ID : **630680561368**
Option 1 ID : **6306802194426**
Option 2 ID : **6306802194427**
Option 3 ID : **6306802194425**
Option 4 ID : **6306802194428**
Status : **Answered**
Chosen Option : **2**

Q.6 Which of the following option will embed the original image (X)?



Ans
✗ 1. 3
✓ 2. 4
✗ 3. 2
✗ 4. 1

Question ID : **630680561365**
Option 1 ID : **6306802194415**
Option 2 ID : **6306802194416**
Option 3 ID : **6306802194414**
Option 4 ID : **6306802194413**
Status : **Answered**
Chosen Option : **2**

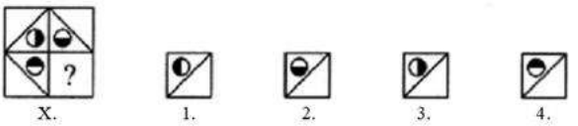
Q.7 Which among the following option will replace the question mark on the basis of sportsperson and sports?

Daniel Vettori : Cricket :: Mithali Raj :?

Ans
✗ 1. Wrestling
✓ 2. Cricket
✗ 3. Hockey
✗ 4. Badminton

Question ID : **630680561360**
Option 1 ID : **6306802194395**
Option 2 ID : **6306802194396**
Option 3 ID : **6306802194394**
Option 4 ID : **6306802194393**
Status : **Answered**
Chosen Option : **2**

Q.8 Which of the following options will replace the question mark in the given figure below?



Ans

✗ 1. 2

✓ 2. 1

✗ 3. 4

✗ 4. 3

Question ID : **630680561364**
Option 1 ID : **6306802194410**
Option 2 ID : **6306802194409**
Option 3 ID : **6306802194412**
Option 4 ID : **6306802194411**
Status : **Answered**
Chosen Option : **2**

Q.9 राकेश की माँ की इकलौती बहू का बेटा राकेश की माँ से किस प्रकार संबंधित है?

Ans

✗ 1. भतीजा

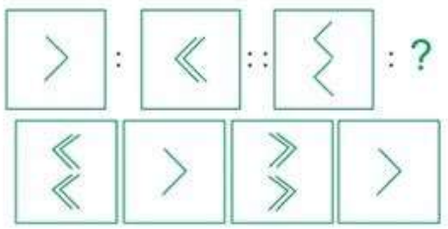
✓ 2. पोता

✗ 3. बेटा

✗ 4. दादी

Question ID : **630680561359**
Option 1 ID : **6306802194392**
Option 2 ID : **6306802194389**
Option 3 ID : **6306802194390**
Option 4 ID : **6306802194391**
Status : **Answered**
Chosen Option : **2**

Q.10 Which of the following option figure will replace the question mark?



(A) (B) (C) (D)

Ans
✔ 1. C
✘ 2. D
✘ 3. A
✘ 4. B

Question ID : **630680561367**
Option 1 ID : **6306802194423**
Option 2 ID : **6306802194424**
Option 3 ID : **6306802194421**
Option 4 ID : **6306802194422**
Status : **Answered**
Chosen Option : **1**

Q.11 Find the non-capital city out of the following options.

Ans
✘ 1. Dhaka
✘ 2. Hanoi
✔ 3. Sumatra
✘ 4. Jakarta

Question ID : **630680561361**
Option 1 ID : **6306802194399**
Option 2 ID : **6306802194398**
Option 3 ID : **6306802194400**
Option 4 ID : **6306802194397**
Status : **Answered**
Chosen Option : **3**

Q.12 In a certain code language, AIR is written as 28 and HAIR is written as 36. How CAR will be written in the same code?

Ans

✔ 1. 22

✘ 2. 20

✘ 3. 25

✘ 4. 29

Question ID : **630680561358**
Option 1 ID : **6306802194386**
Option 2 ID : **6306802194385**
Option 3 ID : **6306802194387**
Option 4 ID : **6306802194388**
Status : **Answered**
Chosen Option : **1**

Section : **General English**

Q.1 **Select the most appropriate SYNONYM of the word highlighted/ given in brackets in the below sentence.**

The (pursuit) of scientific knowledge has played a significant role in shaping our understanding of the world around us.

Ans

✔ 1. chasing

✘ 2. receiving

✘ 3. welcoming

✘ 4. admitting

Question ID : **630680561375**
Option 1 ID : **6306802194455**
Option 2 ID : **6306802194453**
Option 3 ID : **6306802194456**
Option 4 ID : **6306802194454**
Status : **Answered**
Chosen Option : **4**

Q.2 **The following sentence has been divided into parts. One of them may contain an error. Select the part that contains the error in verb form from the given options.**

You/ have to/ choosing/ your meal/ for the wedding.

Ans

✘ 1. your meal

✔ 2. choosing

✘ 3. You

✘ 4. have to

Question ID : **630680561371**
Option 1 ID : **6306802194440**
Option 2 ID : **6306802194437**
Option 3 ID : **6306802194439**
Option 4 ID : **6306802194438**
Status : **Answered**
Chosen Option : **2**

Q.3 **Fill in the blank with the correct word from the below options.**

A Pigeon, oppressed by _____ thirst, saw a goblet of water painted on a signboard.

Ans
1. modest
2. less
3. excessive
4. insufficient

Question ID : **630680561376**
Option 1 ID : **6306802194457**
Option 2 ID : **6306802194458**
Option 3 ID : **6306802194459**
Option 4 ID : **6306802194460**
Status : **Answered**
Chosen Option : **3**

Q.4 **In the following question a statement has been given with highlighted text. You are required to replace the text with correct Idioms given in the options.**

It was Allison's first day at her new school, and she felt like (in an uncomfortable situation).

Ans
1. All ears
2. A fish out of water
3. Bigger fish to fry
4. Chicken out

Question ID : **630680561374**
Option 1 ID : **6306802194449**
Option 2 ID : **6306802194450**
Option 3 ID : **6306802194451**
Option 4 ID : **6306802194452**
Status : **Answered**
Chosen Option : **2**

Q.5 **Fill in the blank with the correct word from the below options.**

The topic of the living wage has become increasingly _____ in today's world, where the main goal of capitalism is to make money.

Ans
1. importance
2. ineffective
3. relevant
4. compelled

Question ID : **630680561377**
Option 1 ID : **6306802194462**
Option 2 ID : **6306802194463**
Option 3 ID : **6306802194464**
Option 4 ID : **6306802194461**
Status : **Answered**
Chosen Option : **3**

Q.6 **Select the appropriate article from the below options to complete the sentence. Mark "No article" if there is no requirement of article in the given sentence.**

Mary and I arrived at ___ same time.

Ans

✗ 1. an

✗ 2. a

✗ 3. No article

✓ 4. the

Question ID : **630680561370**
Option 1 ID : **6306802194435**
Option 2 ID : **6306802194434**
Option 3 ID : **6306802194433**
Option 4 ID : **6306802194436**
Status : **Answered**
Chosen Option : **4**

Q.7 **Choose the most appropriate one-word substitution for the below word. "A form of government in which power is held by the nobility"**

Ans

✗ 1. Neocracy

✓ 2. Aristocracy

✗ 3. Archives

✗ 4. Democracy

Question ID : **630680561372**
Option 1 ID : **6306802194443**
Option 2 ID : **6306802194444**
Option 3 ID : **6306802194442**
Option 4 ID : **6306802194441**
Status : **Answered**
Chosen Option : **1**

Q.8 **Fill in the blank with the correct word from the below options.**

Great literature, whether it takes the form of poetry, drama, or the novel, has an _____ maturing effect on our emotional nature.

Ans

✓ 1. undoubtedly

✗ 2. dauntedly

✗ 3. impress

✗ 4. profitably

Question ID : **630680561378**
Option 1 ID : **6306802194466**
Option 2 ID : **6306802194468**
Option 3 ID : **6306802194465**
Option 4 ID : **6306802194467**
Status : **Answered**
Chosen Option : **1**

Q.9 **In the below sentence one of the words has been misspelt. Choose from the below given options that spells the word in bold correctly.**
Compared to other modes of transportation, air travel is statistically safe. However, air disasters often result in fatelities, making them widely reported and garnering international pressure to improve safety measures.

Ans
✗ 1. fataleties
✗ 2. fattalities
✗ 3. fataalitiies
✓ 4. fatalities

Question ID : **630680561373**
Option 1 ID : **6306802194447**
Option 2 ID : **6306802194445**
Option 3 ID : **6306802194448**
Option 4 ID : **6306802194446**
Status : **Answered**
Chosen Option : **4**

Comprehension:

Refer to the below passage and answer the questions.
Smoking is an insidious habit that has many negative effects on a person's health. While some may see it as a way to relax or socialize, the harm it causes is far greater than any perceived benefits. It is concerning to see that many young people have taken up this habit, so it is important to understand the dangers of smoking and to urge smokers to quit.Cigarette smoke contains a plethora of toxic substances, including carbon monoxide, nicotine, and carcinogens, which can lead to long-term health issues. Carbon monoxide, for instance, impairs the body's capacity to carry oxygen, which causes fatigue and breathlessness even with minor physical exertion. Additionally, the lack of oxygen in the body accelerates the aging process, which can result in premature wrinkles. It's also important to note that smoking isn't just harmful to the smoker, but also to those around them who inhale the smoke. This is known as secondary smoke, which can lead to similar health problems for non-smokers, such as lung cancer, heart disease, and stroke. This is why it's important for smokers to be considerate of those around them and to quit smoking altogether. In conclusion, the dangers of smoking are clear and should not be taken lightly. As a community, we must work together to encourage smokers to quit and promote a healthier lifestyle. Whether through smoking cessation programs or support from family and friends, it is possible for smokers to overcome this habit and improve their health in the long run.

SubQuestion No : 10

Q.10 **Select the most appropriate SYNONYM of the given word below.**

plethora

Ans
✗ 1. scarcity
✗ 2. inadequacy
✓ 3. abundance
✗ 4. deficiency

Question ID : **630680561381**
Option 1 ID : **6306802194475**
Option 2 ID : **6306802194476**
Option 3 ID : **6306802194474**
Option 4 ID : **6306802194473**
Status : **Answered**
Chosen Option : **3**

Comprehension:

Refer to the below passage and answer the questions.
Smoking is an insidious habit that has many negative effects on a person's health. While some may see it as a way to relax or socialize, the harm it causes is far greater than any perceived benefits. It is concerning to see that many young people have taken up this habit, so it is important to understand the dangers of smoking and to urge smokers to quit.Cigarette smoke contains a plethora of toxic substances, including carbon monoxide, nicotine, and carcinogens, which can lead to long-term health issues. Carbon monoxide, for instance, impairs the body's capacity to carry oxygen, which causes fatigue and breathlessness even with minor physical exertion. Additionally, the lack of oxygen in the body accelerates the aging process, which can result in premature wrinkles. It's also important to note that smoking isn't just harmful to the smoker, but also to those around them who inhale the smoke. This is known as secondary smoke, which can lead to similar health problems for non-smokers, such as lung cancer, heart disease, and stroke. This is why it's important for smokers to be considerate of those around them and to quit smoking altogether. In conclusion, the dangers of smoking are clear and should not be taken lightly. As a community, we must work together to encourage smokers to quit and promote a healthier lifestyle. Whether through smoking cessation programs or support from family and friends, it is possible for smokers to overcome this habit and improve their health in the long run.

SubQuestion No : 11

Q.11 Identify the suitable title for the passage.

Ans

✗ 1. Benefits of smoking

✗ 2. Promoting smoking cessation programs

✗ 3. Smoking- best way to beat boredom

✓ 4. The Hazards of Smoking: A Call to Quit

Question ID : **630680561380**
Option 1 ID : **6306802194469**
Option 2 ID : **6306802194470**
Option 3 ID : **6306802194471**
Option 4 ID : **6306802194472**
Status : **Answered**
Chosen Option : **4**

Comprehension:

Refer to the below passage and answer the questions.
Smoking is an insidious habit that has many negative effects on a person's health. While some may see it as a way to relax or socialize, the harm it causes is far greater than any perceived benefits. It is concerning to see that many young people have taken up this habit, so it is important to understand the dangers of smoking and to urge smokers to quit.Cigarette smoke contains a plethora of toxic substances, including carbon monoxide, nicotine, and carcinogens, which can lead to long-term health issues. Carbon monoxide, for instance, impairs the body's capacity to carry oxygen, which causes fatigue and breathlessness even with minor physical exertion. Additionally, the lack of oxygen in the body accelerates the aging process, which can result in premature wrinkles. It's also important to note that smoking isn't just harmful to the smoker, but also to those around them who inhale the smoke. This is known as secondary smoke, which can lead to similar health problems for non-smokers, such as lung cancer, heart disease, and stroke. This is why it's important for smokers to be considerate of those around them and to quit smoking altogether. In conclusion, the dangers of smoking are clear and should not be taken lightly. As a community, we must work together to encourage smokers to quit and promote a healthier lifestyle. Whether through smoking cessation programs or support from family and friends, it is possible for smokers to overcome this habit and improve their health in the long run.

SubQuestion No : 12

Q.12 Select the most appropriate ANTONYM of the given word below.

Insidious

Ans

✗ 1. Deceptive

✗ 2. Misleading

✓ 3. Straight

✗ 4. Deceitful

Question ID : **630680561382**
Option 1 ID : **6306802194477**
Option 2 ID : **6306802194479**
Option 3 ID : **6306802194480**
Option 4 ID : **6306802194478**
Status : **Answered**
Chosen Option : **4**

Section : **General Hindi**

Q.1 कन्यादान में कौन सा समास है?

Ans

✓ 1. तत्पुरुष समास

✗ 2. कर्मधारय समास

✗ 3. द्विगु समास

✗ 4. द्वंद समस

Question ID : **630680561386**
Option 1 ID : **6306802194494**
Option 2 ID : **6306802194496**
Option 3 ID : **6306802194495**
Option 4 ID : **6306802194493**
Status : **Not Answered**
Chosen Option : **--**

Q.2 निम्नलिखित में से कौन सा शब्द "अपकीर्ति" का विलोम शब्द है?

Ans
✗ 1. किर्ति
✓ 2. कीर्ति
✗ 3. उन कीर्ति
✗ 4. किरती

Question ID : **630680561390**
Option 1 ID : **6306802194510**
Option 2 ID : **6306802194509**
Option 3 ID : **6306802194512**
Option 4 ID : **6306802194511**
Status : **Not Answered**
Chosen Option : **--**

Q.3 निम्नलिखित में से कौन सा शब्द वाक्य "पर्वत की कन्या" के लिए सबसे सटीक अर्थ प्रदान करता है?

Ans
✗ 1. पर्वतंचली
✗ 2. सकिंचन
✓ 3. पार्वती
✗ 4. पांचाली

Question ID : **630680561388**
Option 1 ID : **6306802194503**
Option 2 ID : **6306802194501**
Option 3 ID : **6306802194504**
Option 4 ID : **6306802194502**
Status : **Not Answered**
Chosen Option : **--**

Q.4 "सुरसरि" निम्नलिखित में से किस शब्द का पर्यावाची शब्द है?

Ans
✗ 1. कपड़ा
✓ 2. गंगा
✗ 3. गणेश
✗ 4. कमला

Question ID : **630680561389**
Option 1 ID : **6306802194505**
Option 2 ID : **6306802194506**
Option 3 ID : **6306802194507**
Option 4 ID : **6306802194508**
Status : **Not Answered**
Chosen Option : **--**

Q.5 निम्नलिखित में से कौन शब्द काव्यकार का सामासिक विग्रह है?

Ans

✗ 1. काव्य की रचना

✓ 2. काव्य की रचना करने वाला

✗ 3. काव्य के लिए रचना

✗ 4. काव्य में रचना

Question ID : **630680561387**
Option 1 ID : **6306802194498**
Option 2 ID : **6306802194497**
Option 3 ID : **6306802194500**
Option 4 ID : **6306802194499**
Status : **Not Answered**
Chosen Option : **--**

Q.6 मणि- मणी शब्द युग्म का सही अर्थ क्या है?

Ans

✓ 1. रत्न – सर्प

✗ 2. लय – रस

✗ 3. रस – लय

✗ 4. सर्प – रत्न

Question ID : **630680561391**
Option 1 ID : **6306802194514**
Option 2 ID : **6306802194516**
Option 3 ID : **6306802194515**
Option 4 ID : **6306802194513**
Status : **Not Answered**
Chosen Option : **--**

Q.7 चिरंजीवी में कौन सा उपसर्ग है?

Ans

✗ 1. ची

✓ 2. चिर

✗ 3. चिरन

✗ 4. चि

Question ID : **630680561384**
Option 1 ID : **6306802194485**
Option 2 ID : **6306802194487**
Option 3 ID : **6306802194488**
Option 4 ID : **6306802194486**
Status : **Not Answered**
Chosen Option : **--**

Q.8 "हाथ लगाना" मुहावरे का अर्थ निम्नलिखित में से क्या है?

Ans
✗ 1. सहायता देना
✗ 2. अलग होना
✓ 3. आरंभ करना
✗ 4. मदद करना

Question ID : **630680561392**
Option 1 ID : **6306802194517**
Option 2 ID : **6306802194519**
Option 3 ID : **6306802194520**
Option 4 ID : **6306802194518**
Status : **Not Answered**
Chosen Option : **--**

Q.9 "जैसी करनी वैसी भरनी" लोकोक्ति का क्या अर्थ है?

Ans
✗ 1. जो जितना उधार लेता है, उसे उतना हीं लौटाना पड़ता है।
✗ 2. बुरे काम का परिणाम बुरा होता है।
✗ 3. अच्छे कर्म वाले को बुरा काम छोड़ देना चाहिए।
✓ 4. कार्य के अनुसार परिणाम का मिलना।

Question ID : **630680561393**
Option 1 ID : **6306802194522**
Option 2 ID : **6306802194521**
Option 3 ID : **6306802194524**
Option 4 ID : **6306802194523**
Status : **Not Answered**
Chosen Option : **--**

Q.10 जहरीला शब्द में कौन सा प्रत्यय है?

Ans
✓ 1. ईला
✗ 2. आ
✗ 3. ला
✗ 4. इला

Question ID : **630680561385**
Option 1 ID : **6306802194490**
Option 2 ID : **6306802194492**
Option 3 ID : **6306802194491**
Option 4 ID : **6306802194489**
Status : **Not Answered**
Chosen Option : **--**

Q.11 तपोभूमि का संधि विच्छेद निम्नलिखित में से क्या है?

Ans
✗ 1. तपु + भूमि
✗ 2. तपो + भूमि
✓ 3. तपः + भूमि
✗ 4. तप + भूमि

Question ID : **630680561383**
Option 1 ID : **6306802194484**
Option 2 ID : **6306802194483**
Option 3 ID : **6306802194481**
Option 4 ID : **6306802194482**
Status : **Not Answered**
Chosen Option : **--**

Q.12 चोर को _____ कराने में जनता ने सहयोग किया।

Ans
✓ 1. गिरफ्तार
✗ 2. दंड
✗ 3. कैद
✗ 4. कारावास

Question ID : **630680561394**
Option 1 ID : **6306802194526**
Option 2 ID : **6306802194528**
Option 3 ID : **6306802194525**
Option 4 ID : **6306802194527**
Status : **Not Answered**
Chosen Option : **--**

Section : **Technical Subject**

Q.1 If the transconductance (gm) of a BJT is 40 mS and h_ie is 1.5 kΩ, what is the h_fe of the transistor?

Ans
✗ 1. 75
✗ 2. 26.67
✓ 3. 60
✗ 4. 40

Question ID : **630680561423**
Option 1 ID : **6306802194644**
Option 2 ID : **6306802194641**
Option 3 ID : **6306802194643**
Option 4 ID : **6306802194642**
Status : **Answered**
Chosen Option : **3**

Q.2 A strict sense stationary random process Z(t) has a mean value of 10 at t=0. What is the mean value of Z(t) at t=10?

Ans

✗ 1. 0

✗ 2. 15

✓ 3. 10

✗ 4. 5

Question ID : **630680561455**
Option 1 ID : **6306802194769**
Option 2 ID : **6306802194772**
Option 3 ID : **6306802194771**
Option 4 ID : **6306802194770**
Status : **Answered**
Chosen Option : **3**

Q.3 If a company experienced 120 cyber attacks in 2020 and this number increased by 25% in 2021, how many cyber attack incidents did the company experience in 2021?

Ans

✗ 1. 160

✗ 2. 140

✓ 3. 150

✗ 4. 130

Question ID : **630680561487**
Option 1 ID : **6306802194900**
Option 2 ID : **6306802194898**
Option 3 ID : **6306802194899**
Option 4 ID : **6306802194897**
Status : **Answered**
Chosen Option : **3**

Q.4 In a coherent M-ary system, the phase difference between symbols plays a crucial role in representing information. Compared to coherent binary phase shift keying (BPSK), what potential advantage does a coherent M-ary scheme offer?

Ans

✗ 1. Simplified receiver design with lower complexity.

✓ 2. Improved resilience to channel noise and interference.

✗ 3. Both Increased bandwidth efficiency, transmitting more bits per symbol and Improved resilience to channel noise and interference.

✗ 4. Increased bandwidth efficiency, transmitting more bits per symbol.

Question ID : **630680561474**
Option 1 ID : **6306802194847**
Option 2 ID : **6306802194846**
Option 3 ID : **6306802194848**
Option 4 ID : **6306802194845**
Status : **Answered**
Chosen Option : **3**

Q.5 A logical file system organizes files and folders in a hierarchical structure. Which of the following is NOT a typical component of a logical file system?

Ans

✗ 1. File descriptor

✓ 2. File

✗ 3. Physical block

✗ 4. Directory

Question ID : **630680561478**
Option 1 ID : **6306802194863**
Option 2 ID : **6306802194861**
Option 3 ID : **6306802194864**
Option 4 ID : **6306802194862**
Status : **Answered**
Chosen Option : **3**

Q.6 A data link layer uses a sliding window protocol with a window size of 7 frames. If each frame is 1,000 bits and the round-trip propagation delay is 21 milliseconds, what is the maximum throughput of the system?

Ans

✓ 1. 666.67 frames per second

✗ 2. 333.33 frames per second

✗ 3. 1,400 frames per second

✗ 4. 1,000 frames per second

Question ID : **630680561480**
Option 1 ID : **6306802194870**
Option 2 ID : **6306802194869**
Option 3 ID : **6306802194872**
Option 4 ID : **6306802194871**
Status : **Answered**
Chosen Option : **2**

Q.7 You are using a data acquisition system to monitor a rapidly changing voltage signal. The system has a 16-bit analog-to-digital converter (ADC) and operates at a sampling rate of 10,000 samples per second. What is the minimum time required to capture a full cycle of the highest frequency component in the signal?

Ans

✗ 1. 10 seconds

✗ 2. 0.1 seconds

✗ 3. 1 second

✓ 4. 0.01 seconds

Question ID : **630680561412**
Option 1 ID : **6306802194600**
Option 2 ID : **6306802194598**
Option 3 ID : **6306802194599**
Option 4 ID : **6306802194597**
Status : **Answered**
Chosen Option : **4**

Q.8 What happens when you use the CD command without specifying a directory name in DOS?

Ans

✔ 1. It changes the working directory to the root directory.

✘ 2. It opens the system help menu.

✘ 3. It displays the current directory path.

✘ 4. It throws an error message due to missing arguments.

Question ID : **630680561418**
Option 1 ID : **6306802194622**
Option 2 ID : **6306802194624**
Option 3 ID : **6306802194621**
Option 4 ID : **6306802194623**
Status : **Answered**
Chosen Option : **4**

Q.9 Given items with the following weight and value pairs: (6, 60), (10, 20), (3, 30), and a knapsack capacity of 8 units, what is the optimal solution value for the fractional knapsack problem using the greedy algorithm?

Ans

✘ 1. 110

✘ 2. 100

✘ 3. 80

✔ 4. 90

Question ID : **630680561465**
Option 1 ID : **6306802194812**
Option 2 ID : **6306802194811**
Option 3 ID : **6306802194809**
Option 4 ID : **6306802194810**
Status : **Answered**
Chosen Option : **2**

Q.10 In a crystallography study, X-rays with a wavelength of 0.6328 Å are incident on a crystal. If the second-order diffraction peak n=2) is observed at an angle of 50 degrees, what is the interplanar spacing (d-spacing) of the crystal lattice?

Ans

✘ 1. 2.5312 Å

✘ 2. 0.6328 Å

✔ 3. 1.2656 Å

✘ 4. 0.3164 Å

Question ID : **630680561405**
Option 1 ID : **6306802194572**
Option 2 ID : **6306802194571**
Option 3 ID : **6306802194569**
Option 4 ID : **6306802194570**
Status : **Answered**
Chosen Option : **3**

Q.11 Given a sequential circuit with 5 states and binary inputs, what is the maximum length of a homing sequence required to determine the state of the circuit?

Ans

✗ 1. 20

✗ 2. 15

✗ 3. 5

✓ 4. 10

Question ID : **630680561436**
Option 1 ID : **6306802194696**
Option 2 ID : **6306802194695**
Option 3 ID : **6306802194693**
Option 4 ID : **6306802194694**
Status : **Answered**
Chosen Option : **3**

Q.12 A CPU has an instruction set that includes 50 different opcodes. If each opcode requires its own unique binary code, what is the minimum number of bits required to represent all the opcodes?

Ans

✓ 1. 6 bits

✗ 2. 7 bits

✗ 3. 8 bits

✗ 4. 5 bits

Question ID : **630680561448**
Option 1 ID : **6306802194742**
Option 2 ID : **6306802194743**
Option 3 ID : **6306802194744**
Option 4 ID : **6306802194741**
Status : **Answered**
Chosen Option : **2**

Q.13 Consider a memory system with 3 frames and the following page reference string: 1, 2, 3, 4, 2, 1, 5, 2, 4. Using the Optimal Page Replacement Algorithm, how many page faults occur?

Ans

✗ 1. 7

✗ 2. 5

✗ 3. 8

✓ 4. 6

Question ID : **630680561476**
Option 1 ID : **6306802194855**
Option 2 ID : **6306802194853**
Option 3 ID : **6306802194856**
Option 4 ID : **6306802194854**
Status : **Answered**
Chosen Option : **2**

Q.14 Using Simpson's 1/3 Rule, a specific case of the Newton-Cotes formulas, what is the approximation for $\int_a^b f(x)dx$ given three equally spaced points a, m, and b?

Ans

✗ 1. $(b-a)/3[f(a)+4f(m)+f(b)]$

✗ 2. $(b-a)/4[f(a)+2f(m)+f(b)]$

✗ 3. $(b-a)/8[f(a)+3f(m)+3f(m)+f(b)]$

✓ 4. $(b-a)/6\ [f(a)+4f(m)+f(b)]$

Question ID : **630680561396**
Option 1 ID : **6306802194534**
Option 2 ID : **6306802194536**
Option 3 ID : **6306802194535**
Option 4 ID : **6306802194533**
Status : **Answered**
Chosen Option : **1**

Q.15 Given coins of denominations 1, 3, and 4. What is the minimum number of coins needed to make a change for 6 units using dynamic programming?

Ans

✗ 1. 5

✗ 2. 2

✗ 3. 4

✓ 4. 3

Question ID : **630680561464**
Option 1 ID : **6306802194808**
Option 2 ID : **6306802194805**
Option 3 ID : **6306802194807**
Option 4 ID : **6306802194806**
Status : **Answered**
Chosen Option : **2**

Q.16 A steel bridge is galvanized to protect it from corrosion. If the bridge has a total surface area of 1,000 square meters and a zinc coating of 100 micrometers (0.1 mm) thickness is applied uniformly, what is the volume of zinc (in cubic meters) required for galvanization? (Hint: Volume = Surface Area × Thickness)

Ans

✓ 1. $0.1\ m^3$

✗ 2. $1\ m^3$

✗ 3. $10\ m^3$

✗ 4. $0.01\ m^3$

Question ID : **630680561406**
Option 1 ID : **6306802194573**
Option 2 ID : **6306802194575**
Option 3 ID : **6306802194576**
Option 4 ID : **6306802194574**
Status : **Answered**
Chosen Option : **1**

Q.17 Which of the following is a valid inference in predicate calculus?

Ans

✔ 1. From '$\forall x\ P(x)$' and '$\forall x\ (P(x) \rightarrow Q(x))$', infer '$\forall x\ Q(x)$'

✘ 2. From '$P(a) \rightarrow Q(a)$', infer '$\forall x\ (P(x) \rightarrow Q(x))$'

✘ 3. From '$\exists x\ P(x)$', infer '$\forall x\ P(x)$'

✘ 4. From '$\exists x\ (P(x) \wedge Q(x))$', infer '$\forall x\ P(x)$'

Question ID : **630680561432**
Option 1 ID : **6306802194677**
Option 2 ID : **6306802194679**
Option 3 ID : **6306802194680**
Option 4 ID : **6306802194678**
Status : **Answered**
Chosen Option : **1**

Q.18 A 50 kg box is placed on a rough surface. It experiences a gravitational force of 490 N downward and a frictional force of 150 N opposing its motion. What is the net force acting on the box, and in which direction should it be drawn in the Free Body Diagram (FBD)?

Ans

✔ 1. Net force is 150 N to the right.

✘ 2. Net force is 340 N to the right.

✘ 3. Net force is 490 N upward.

✘ 4. Net force is 490 N downward.

Question ID : **630680561402**
Option 1 ID : **6306802194558**
Option 2 ID : **6306802194560**
Option 3 ID : **6306802194557**
Option 4 ID : **6306802194559**
Status : **Answered**
Chosen Option : **3**

Q.19 If two 2-port networks with Z-parameters =[Z11, Z12 ;Z21, Z22]=[1,2;3,4] and [W11,W12;W21,W22]=[4,3;2,1] are connected in parallel, find the overall Z21 of the combined network.

Ans

✘ 1. 3.5

✔ 2. 2.5

✘ 3. 4.0

✘ 4. 3.0

Question ID : **630680561439**
Option 1 ID : **6306802194707**
Option 2 ID : **6306802194705**
Option 3 ID : **6306802194708**
Option 4 ID : **6306802194706**
Status : **Answered**
Chosen Option : **1**

Q.20 If a cellular network operates with a reuse pattern of N=7 and the total number of duplex channels is 840, what is the maximum number of channels per cell in a 7-cell cluster?

Ans

✗ 1. 360 channels

✓ 2. 120 channels

✗ 3. 70 channels

✗ 4. 240 channels

Question ID : **630680561426**
Option 1 ID : **6306802194656**
Option 2 ID : **6306802194654**
Option 3 ID : **6306802194653**
Option 4 ID : **6306802194655**
Status : **Answered**
Chosen Option : **2**

Q.21 During the process of cracking in the petroleum industry, larger hydrocarbons are broken down into smaller ones. If a hydrocarbon with 16 carbon atoms is cracked, resulting in two hydrocarbons with 8 carbon atoms each, what is the type of cracking that occurred?

Ans

✓ 1. Thermal cracking

✗ 2. Steam cracking

✗ 3. Catalytic cracking

✗ 4. Hydrocracking

Question ID : **630680561403**
Option 1 ID : **6306802194561**
Option 2 ID : **6306802194564**
Option 3 ID : **6306802194562**
Option 4 ID : **6306802194563**
Status : **Answered**
Chosen Option : **4**

Q.22 an array of 7 elements, all distinct, is nearly sorted and requires only one element to be moved to complete the sorting using insertion sort, how many comparisons are needed?

Ans

✗ 1. 1

✓ 2. 6

✗ 3. 12

✗ 4. 7

Question ID : **630680561441**
Option 1 ID : **6306802194713**
Option 2 ID : **6306802194714**
Option 3 ID : **6306802194716**
Option 4 ID : **6306802194715**
Status : **Answered**
Chosen Option : **4**

Q.23 Convert the octal number 7357 to its equivalent in hexadecimal.

Ans

✗ 1. 1BD7

✓ 2. EEF

✗ 3. 1EF

✗ 4. 1E77

Question ID : **630680561422**
Option 1 ID : **6306802194637**
Option 2 ID : **6306802194638**
Option 3 ID : **6306802194639**
Option 4 ID : **6306802194640**
Status : **Answered**
Chosen Option : **2**

Q.24 In a typical file access scenario, what happens to the file pointer after performing a read operation on a file opened in "rb" (read binary) mode?

Ans

✗ 1. Its behavior depends on the operating system and file system.

✗ 2. It moves to the end of the file.

✗ 3. It advances automatically by the number of bytes read.

✓ 4. It remains unchanged at the beginning of the last read byte.

Question ID : **630680561431**
Option 1 ID : **6306802194676**
Option 2 ID : **6306802194675**
Option 3 ID : **6306802194674**
Option 4 ID : **6306802194673**
Status : **Answered**
Chosen Option : **3**

Q.25 A transmission network has a total bandwidth of 100 Mbps. If a streaming service requires a Quality of Service (QoS) guarantee of 20% of the total bandwidth, what is the allocated bandwidth for the streaming service?

Ans

✗ 1. 10 Mbps

✓ 2. 20 Mbps

✗ 3. 30 Mbps

✗ 4. 40 Mbps

Question ID : **630680561481**
Option 1 ID : **6306802194873**
Option 2 ID : **6306802194874**
Option 3 ID : **6306802194875**
Option 4 ID : **6306802194876**
Status : **Answered**
Chosen Option : **2**

Q.26 In the context of Local Area Networks (LANs) operating according to the OSI model, which layer is responsible for physical addressing and media access control?

Ans

✗ 1. Data Link Layer

✗ 2. Session Layer

✗ 3. Application Layer

✓ 4. Presentation Layer

Question ID : **630680561428**
Option 1 ID : **6306802194664**
Option 2 ID : **6306802194663**
Option 3 ID : **6306802194661**
Option 4 ID : **6306802194662**
Status : **Answered**
Chosen Option : **3**

Q.27 In a frequency modulation (FM) system, the frequency deviation is 75 kHz, and the maximum modulating frequency is 15 kHz. What is the modulation index of the FM system?

Ans

✓ 1. 5

✗ 2. 2

✗ 3. 4

✗ 4. 10

Question ID : **630680561457**
Option 1 ID : **6306802194779**
Option 2 ID : **6306802194777**
Option 3 ID : **6306802194778**
Option 4 ID : **6306802194780**
Status : **Answered**
Chosen Option : **1**

Q.28 A software testing team initially takes 20 hours to test a software module. After process improvement, the testing time is reduced to 15 hours. What is the percentage improvement in the testing efficiency?

Ans

✗ 1. 30%

✗ 2. 40%

✓ 3. 25%

✗ 4. 20%

Question ID : **630680561470**
Option 1 ID : **6306802194831**
Option 2 ID : **6306802194832**
Option 3 ID : **6306802194830**
Option 4 ID : **6306802194829**
Status : **Answered**
Chosen Option : **3**

Q.29 In a modulo-division hashed table of size 15, what is the minimum number of keys from the set {1, 2, 3, ..., 30} that must be inserted to guarantee at least one collision?

Ans

✔ 1. 16

✘ 2. 31

✘ 3. 15

✘ 4. 30

Question ID : **630680561443**
Option 1 ID : **6306802194722**
Option 2 ID : **6306802194724**
Option 3 ID : **6306802194721**
Option 4 ID : **6306802194723**
Status : **Answered**
Chosen Option : **1**

Q.30 If a WLL system's protocol stack consists of 4 layers, and it takes an average of 1.5 milliseconds for each layer to process a packet, how long does it take for the entire stack to process a single packet?

Ans

✘ 1. 4.5 milliseconds

✘ 2. 1.5 milliseconds

✘ 3. 3 milliseconds

✔ 4. 6 milliseconds

Question ID : **630680561494**
Option 1 ID : **6306802194927**
Option 2 ID : **6306802194925**
Option 3 ID : **6306802194926**
Option 4 ID : **6306802194928**
Status : **Answered**
Chosen Option : **1**

Q.31 Assuming the received power in a satellite downlink is -85 dBm and the noise power is -120 dBm, what is the signal-to-noise ratio (SNR) in dB?

Ans

✘ 1. 25 dB

✘ 2. 45 dB

✘ 3. 55 dB

✔ 4. 35 dB

Question ID : **630680561427**
Option 1 ID : **6306802194657**
Option 2 ID : **6306802194659**
Option 3 ID : **6306802194660**
Option 4 ID : **6306802194658**
Status : **Answered**
Chosen Option : **4**

Q.32 For a Gaussian distribution with a mean of 100 and a standard deviation of 15, what is the probability of randomly selecting a value exceeding 130?

Ans

✗ 1. Approximately 84.13%

✗ 2. Approximately 15.87%

✗ 3. Approximately 50%

✓ 4. Approximately 2.28%

Question ID : **630680561472**
Option 1 ID : **6306802194840**
Option 2 ID : **6306802194838**
Option 3 ID : **6306802194839**
Option 4 ID : **6306802194837**
Status : **Answered**
Chosen Option : **1**

Q.33 If a cellular system's power control algorithm can vary the transmission power over a dynamic range of 40 dB, and the minimum transmission power is 0.1 Watts, what is the maximum transmission power level?

Ans

✓ 1. 100 Watts

✗ 2. 10,000 Watts

✗ 3. 1,000 Watts

✗ 4. 10 Watts

Question ID : **630680561493**
Option 1 ID : **6306802194922**
Option 2 ID : **6306802194924**
Option 3 ID : **6306802194923**
Option 4 ID : **6306802194921**
Status : **Answered**
Chosen Option : **1**

Q.34 A 2G mobile phone checks for network paging signals every 6 seconds. If the phone is in standby mode for 12 hours, how many times does it check for paging signals?

Ans

✗ 1. 1200

✓ 2. 7200

✗ 3. 12000

✗ 4. 720

Question ID : **630680561492**
Option 1 ID : **6306802194918**
Option 2 ID : **6306802194919**
Option 3 ID : **6306802194920**
Option 4 ID : **6306802194917**
Status : **Answered**
Chosen Option : **2**

Q.35 A client-side script contains an event handler that is executed in 100 milliseconds. If this event is triggered twice in quick succession, with the second trigger occurring 50 milliseconds after the first, and assuming no event handler overlap, what is the time gap between the start of the first and the second event execution?

Ans

✗ 1. 100 milliseconds

✓ 2. 150 milliseconds

✗ 3. 50 milliseconds

✗ 4. 200 milliseconds

Question ID : **630680561485**
Option 1 ID : **6306802194890**
Option 2 ID : **6306802194891**
Option 3 ID : **6306802194889**
Option 4 ID : **6306802194892**
Status : **Answered**
Chosen Option : **2**

Q.36 How does the capacitance of a varactor diode change as the reverse bias voltage increases?

Ans

✓ 1. Increases linearly

✗ 2. Fluctuates randomly

✗ 3. Remains constant

✗ 4. Decreases linearly

Question ID : **630680561421**
Option 1 ID : **6306802194633**
Option 2 ID : **6306802194635**
Option 3 ID : **6306802194636**
Option 4 ID : **6306802194634**
Status : **Answered**
Chosen Option : **1**

Q.37 A multivariate regression model for project duration estimation uses the number of developers (D) and the number of function points (FP) as variables. The model's equation is: Duration (months) = 2 + 0.5 * D + 0.2 * FP. Estimate the project duration for a project with 5 developers and 400 function points.

Ans

✓ 1. 18 months

✗ 2. 12 months

✗ 3. 14 months

✗ 4. 16 Months

Question ID : **630680561466**
Option 1 ID : **6306802194816**
Option 2 ID : **6306802194813**
Option 3 ID : **6306802194814**
Option 4 ID : **6306802194815**
Status : **Answered**
Chosen Option : **2**

Q.38 Consider a standard single-mode fiber with a core refractive index of 1.48 and a cladding refractive index of 1.46. Using the V-number formula $V = (2\pi a/\lambda)\sqrt{n_1^2 - n_2^2}$, where a is the core radius, λ is the operating wavelength, n_1 is the core refractive index, and n_2 is the cladding refractive index, what is the approximate core radius for the fiber to operate in the single-mode at a wavelength of 1550 nm?

Ans

✗ 1. 8.2 µm

✗ 2. 9.0 µm

✓ 3. 4.5 µm

✗ 4. 10.5 µm

Question ID : **630680561399**
Option 1 ID : **6306802194546**
Option 2 ID : **6306802194547**
Option 3 ID : **6306802194545**
Option 4 ID : **6306802194548**
Status : **Answered**
Chosen Option : **1**

Q.39 In CSS, a div element has a width of 200 pixels, padding of 10 pixels on all sides, a border of 5 pixels on all sides, and a margin of 15 pixels on all sides. What is the total width of the box including padding, border, and margin?

Ans

✗ 1. 270 pixels

✓ 2. 260 pixels

✗ 3. 250 pixels

✗ 4. 240 pixels

Question ID : **630680561484**
Option 1 ID : **6306802194888**
Option 2 ID : **6306802194887**
Option 3 ID : **6306802194886**
Option 4 ID : **6306802194885**
Status : **Answered**
Chosen Option : **3**

Q.40 For a signal f(t)=Rect(Tt) (a rectangular function with width T), what is the Fourier transform F(ω)?

Ans

✗ 1. $T \cdot \text{sinc}(\omega T/2)$

✗ 2. $2\sin(\omega T/2)/\omega$

✗ 3. $(\sin(\omega T/2))/\omega$

✓ 4. $T \cdot \text{sinc}(\omega T/2\pi)$

Question ID : **630680561398**
Option 1 ID : **6306802194543**
Option 2 ID : **6306802194544**
Option 3 ID : **6306802194542**
Option 4 ID : **6306802194541**
Status : **Answered**
Chosen Option : **4**

Q.41 You need to generate a 1 kHz sine wave using a function generator. If the frequency accuracy of the generator is ±0.1%, what is the allowable frequency deviation in hertz?

Ans

✔ 1. 10 Hz

✘ 2. 1 Hz

✘ 3. 1000 Hz

✘ 4. 100 Hz

Question ID : **630680561411**
Option 1 ID : **6306802194594**
Option 2 ID : **6306802194593**
Option 3 ID : **6306802194596**
Option 4 ID : **6306802194595**
Status : **Answered**
Chosen Option : **2**

Q.42 The resonant frequency of an empty rectangular cavity resonator is 12 GHz. If the resonator is partially filled with a dielectric material (relative permittivity = 2.25) covering half its volume, what is the new resonant frequency?

Ans

✘ 1. 11 GHz

✔ 2. 9 GHz

✘ 3. 8 GHz

✘ 4. 10 GHz

Question ID : **630680561460**
Option 1 ID : **6306802194792**
Option 2 ID : **6306802194790**
Option 3 ID : **6306802194789**
Option 4 ID : **6306802194791**
Status : **Answered**
Chosen Option : **1**

Q.43 In a program implementing polymorphism, there are 2 classes each with 1 virtual method, and 1 class with 2 virtual methods. How many different polymorphic methods can be overridden by subclasses of these classes?

Ans

✘ 1. 6

✘ 2. 3

✘ 3. 5

✔ 4. 4

Question ID : **630680561454**
Option 1 ID : **6306802194768**
Option 2 ID : **6306802194765**
Option 3 ID : **6306802194767**
Option 4 ID : **6306802194766**
Status : **Answered**
Chosen Option : **4**

Q.44 An LTI system has impulse response h(t) = e^(-t). Which of the following properties does NOT hold true for this system?

Ans

✗ 1. Stable

✓ 2. Causal

✗ 3. Linear

✗ 4. Invertible

Question ID : **630680561437**
Option 1 ID : **6306802194698**
Option 2 ID : **6306802194697**
Option 3 ID : **6306802194700**
Option 4 ID : **6306802194699**
Status : **Answered**
Chosen Option : **4**

Q.45 A computer uses 16-bit addresses for memory-mapped I/O. If the system dedicates 8 bits for I/O device addresses, how many distinct I/O devices can be addressed?

Ans

✗ 1. 1024

✗ 2. 65536

✓ 3. 256

✗ 4. 512

Question ID : **630680561450**
Option 1 ID : **6306802194751**
Option 2 ID : **6306802194752**
Option 3 ID : **6306802194750**
Option 4 ID : **6306802194749**
Status : **Answered**
Chosen Option : **3**

Q.46 A Hertzian dipole antenna has a length of 1 cm and operates at a frequency of 300 MHz. What is the radiation resistance of this antenna?

Ans

✗ 1. Approximately 16.0 ohms

✗ 2. Approximately 1.60 ohms

✓ 3. Approximately 0.16 ohms

✗ 4. Approximately 160.0 ohms

Question ID : **630680561462**
Option 1 ID : **6306802194799**
Option 2 ID : **6306802194798**
Option 3 ID : **6306802194797**
Option 4 ID : **6306802194800**
Status : **Answered**
Chosen Option : **1**

Q.47 When a generic function is overridden in an inherited class, which of the following must be true?

Ans

✗ 1.
The type parameters of the methods must use the same names.

✗ 2.
The overriding method cannot introduce new type parameters.

✗ 3.
The method signature (name, parameters, return type) must remain identical.

✓ 4.
The overriding method must have a broader visibility modifier (e.g., public instead of protected).

Question ID : **630680561453**
Option 1 ID : **6306802194762**
Option 2 ID : **6306802194764**
Option 3 ID : **6306802194761**
Option 4 ID : **6306802194763**
Status : **Answered**
Chosen Option : **4**

Q.48 In a Mealy machine, if the number of states is 'n' and the input size is 'm' bits, what is the total number of distinct outputs possible in the machine (assuming each state transition can produce a unique output)?

Ans

✗ 1. $2n \times m$

✗ 2. $n \times m$

✗ 3. $2n \times 2m$

✓ 4. $n \times 2m$

Question ID : **630680561435**
Option 1 ID : **6306802194691**
Option 2 ID : **6306802194692**
Option 3 ID : **6306802194689**
Option 4 ID : **6306802194690**
Status : **Answered**
Chosen Option : **2**

Q.49 For a CPU with a 256 KB L2 cache and a 12 MB L3 cache, what is the total cache memory (in KB)?

Ans

✗ 1. 12,768 KB

✗ 2. 12,256 KB

✓ 3. 12,512 KB

✗ 4. 13,024 KB

Question ID : **630680561417**
Option 1 ID : **6306802194619**
Option 2 ID : **6306802194617**
Option 3 ID : **6306802194618**
Option 4 ID : **6306802194620**
Status : **Answered**
Chosen Option : **3**

Q.50 In C++ STL, if a std::vector of integers (each 4 bytes) contains 500 elements, what is the approximate memory consumption of this vector in bytes (ignoring any memory overheads)?

Ans

✗ 1. 4000 bytes

✗ 2. 2048 bytes

✗ 3. 2500 bytes

✓ 4. 2000 bytes

Question ID : **630680561452**
Option 1 ID : **6306802194760**
Option 2 ID : **6306802194758**
Option 3 ID : **6306802194759**
Option 4 ID : **6306802194757**
Status : **Answered**
Chosen Option : **1**

Q.51 In a TCP connection, if the estimated round-trip time (RTT) is 250 ms and the estimated RTT variance is 50 ms, what is the retransmission timeout (RTO), calculated using the formula RTO=estimated RTT+4×estimated RTT variance?

Ans

✗ 1. 550 ms

✓ 2. 450 ms

✗ 3. 500 ms

✗ 4. 600 ms

Question ID : **630680561482**
Option 1 ID : **6306802194879**
Option 2 ID : **6306802194877**
Option 3 ID : **6306802194878**
Option 4 ID : **6306802194880**
Status : **Answered**
Chosen Option : **2**

Q.52 A transmission line has a phase velocity of 2.5 x 10^8 m/s. If the frequency of the signal on the line is 500 MHz, what is the wavelength of the signal on this line?

Ans

✗ 1. 0.7 meters

✗ 2. 0.6 meters

✗ 3. 0.8 meters

✓ 4. 0.5 meters

Question ID : **630680561459**
Option 1 ID : **6306802194787**
Option 2 ID : **6306802194786**
Option 3 ID : **6306802194788**
Option 4 ID : **6306802194785**
Status : **Answered**
Chosen Option : **4**

Q.53 What is the primary function of a switch in a network?

Ans

✗ 1. Direct data packets to specific devices based on their MAC addresses

✗ 2. Amplify network signals over long distances

✗ 3. Connect multiple devices to a single shared network segment

✓ 4. Translate between different types of network protocols

Question ID : **630680561419**
Option 1 ID : **6306802194627**
Option 2 ID : **6306802194625**
Option 3 ID : **6306802194626**
Option 4 ID : **6306802194628**
Status : **Answered**
Chosen Option : **1**

Q.54 A receiver is designed to handle orthogonal signals with a bandwidth of 4 kHz. If each signal occupies a bandwidth of 1 kHz, what is the maximum number of orthogonal signals that can be used in this system?

Ans

✗ 1. 16

✓ 2. 4

✗ 3. 2

✗ 4. 8

Question ID : **630680561473**
Option 1 ID : **6306802194844**
Option 2 ID : **6306802194842**
Option 3 ID : **6306802194841**
Option 4 ID : **6306802194843**
Status : **Answered**
Chosen Option : **2**

Q.55 What is the main advantage of using Surface Mount Technology (SMT) in PCBs?

Ans

✗ 1. Increased power consumption

✓ 2. Higher circuit speeds

✗ 3. Easier manual assembly

✗ 4. Larger component sizes

Question ID : **630680561413**
Option 1 ID : **6306802194601**
Option 2 ID : **6306802194603**
Option 3 ID : **6306802194604**
Option 4 ID : **6306802194602**
Status : **Answered**
Chosen Option : **3**

Q.56 As the temperature of a p-n junction diode increases:

Ans
✗ 1. The diffusion current and drift current both decrease.
✗ 2. The reverse saturation current remains constant.
✗ 3. The forward bias voltage needed for conduction decreases.
✓ 4. The depletion region width increases.

Question ID : **630680561420**
Option 1 ID : **6306802194632**
Option 2 ID : **6306802194629**
Option 3 ID : **6306802194631**
Option 4 ID : **6306802194630**
Status : **Answered**
Chosen Option : **4**

Q.57 During a software testing phase, 150 faults are initially detected. After fixing these faults and retesting, 30 new faults are found. What is the fault detection rate after the retest?

Ans
✗ 1. 30%
✗ 2. 16.67%
✓ 3. 20%
✗ 4. 25%

Question ID : **630680561468**
Option 1 ID : **6306802194824**
Option 2 ID : **6306802194821**
Option 3 ID : **6306802194822**
Option 4 ID : **6306802194823**
Status : **Answered**
Chosen Option : **2**

Q.58 Virtual memory allows a program to access more memory than physically available. How does this work?

Ans
✗ 1. By dynamically translating virtual addresses to physical addresses during execution.
✗ 2. By compressing data in memory to fit more information.
✓ 3. By increasing the physical size of the main memory.
✗ 4. By swapping unused pages from memory to storage devices.

Question ID : **630680561475**
Option 1 ID : **6306802194850**
Option 2 ID : **6306802194851**
Option 3 ID : **6306802194849**
Option 4 ID : **6306802194852**
Status : **Answered**
Chosen Option : **2**

Q.59 A CPU operates with a clock speed of 3 GHz and is designed to execute instructions of varying lengths, with an average instruction length of 3 clock cycles. How many instructions, on average, can this CPU execute per second?

Ans

✗ 1. 2 Billion

✗ 2. 9 Billion

✓ 3. 1 Billion

✗ 4. 3 Billion

Question ID : **630680561446**
Option 1 ID : **6306802194734**
Option 2 ID : **6306802194736**
Option 3 ID : **6306802194733**
Option 4 ID : **6306802194735**
Status : **Answered**
Chosen Option : **3**

Q.60 If a signal has a maximum frequency component of 3 kHz, according to the Nyquist theorem, what is the minimum sampling rate required to avoid aliasing?

Ans

✓ 1. 6 kHz

✗ 2. 8 kHz

✗ 3. 3 kHz

✗ 4. 4 kHz

Question ID : **630680561471**
Option 1 ID : **6306802194835**
Option 2 ID : **6306802194836**
Option 3 ID : **6306802194833**
Option 4 ID : **6306802194834**
Status : **Answered**
Chosen Option : **1**

Q.61 A transformer has a primary voltage of 240 V and a secondary voltage of 24 V. If the transformer has an equivalent resistance of 1 ohm and an equivalent reactance of 5 ohms in its equivalent circuit, what is the current in the primary winding when the secondary is delivering 10 A to a load?

Ans

✓ 1. 4 A

✗ 2. 10 A

✗ 3. 1 A

✗ 4. 40 A

Question ID : **630680561407**
Option 1 ID : **6306802194578**
Option 2 ID : **6306802194579**
Option 3 ID : **6306802194577**
Option 4 ID : **6306802194580**
Status : **Answered**
Chosen Option : **2**

Q.62 In a balanced binary tree with 511 nodes, what is the minimum number of nodes that must be removed to have no more than 100 leaf nodes?

Ans

✗ 1. 308

✓ 2. 206

✗ 3. 307

✗ 4. 205

Question ID : **630680561442**
Option 1 ID : **6306802194720**
Option 2 ID : **6306802194718**
Option 3 ID : **6306802194719**
Option 4 ID : **6306802194717**
Status : **Answered**
Chosen Option : **1**

Q.63 In a high-density PCB design, what is the minimum recommended spacing (in mm) between fine-pitch surface mount pads according to IPC-7351?

Ans

✗ 1. 0.5 mm

✓ 2. 0.125 mm

✗ 3. 0.2 mm

✗ 4. 0.25 mm

Question ID : **630680561414**
Option 1 ID : **6306802194608**
Option 2 ID : **6306802194605**
Option 3 ID : **6306802194606**
Option 4 ID : **6306802194607**
Status : **Answered**
Chosen Option : **1**

Q.64 For a super heterodyne receiver with an intermediate frequency of 455 kHz, if it is tuned to a station at 1000 kHz, what is the image frequency that must be rejected?

Ans

✗ 1. 1910 kHz

✓ 2. 1455 kHz

✗ 3. 910 kHz

✗ 4. 455 kHz

Question ID : **630680561458**
Option 1 ID : **6306802194784**
Option 2 ID : **6306802194783**
Option 3 ID : **6306802194782**
Option 4 ID : **6306802194781**
Status : **Answered**
Chosen Option : **1**

Q.65 You are using a dual trace oscilloscope to measure the phase difference between two AC signals. If you observe that one waveform is leading the other, what is the phase angle in degrees?

Ans

✗ 1. 45 degrees

✓ 2. 90 degrees

✗ 3. 180 degrees

✗ 4. 135 degrees

Question ID : **630680561409**
Option 1 ID : **6306802194585**
Option 2 ID : **6306802194586**
Option 3 ID : **6306802194588**
Option 4 ID : **6306802194587**
Status : **Answered**
Chosen Option : **3**

Q.66 A server implementing HTTPS observes that processing a request takes on average 20% more time compared to HTTP due to encryption and decryption overhead. If an HTTP request takes 100 ms, how long will it take on average to process the same request via HTTPS?

Ans

✓ 1. 120 ms

✗ 2. 100 ms

✗ 3. 200 ms

✗ 4. 220 ms

Question ID : **630680561486**
Option 1 ID : **6306802194894**
Option 2 ID : **6306802194893**
Option 3 ID : **6306802194895**
Option 4 ID : **6306802194896**
Status : **Answered**
Chosen Option : **1**

Q.67 A transformer is subjected to a rapidly changing magnetic field, leading to significant eddy current losses. To minimize these losses, which of the following techniques would be most effective?

Ans

✗ 1. Increasing the core's hysteresis loop area

✗ 2. Using a core made of high-resistivity material

✓ 3. Laminating the core to reduce the path for eddy currents

✗ 4. Increasing the operating frequency of the transformer

Question ID : **630680561408**
Option 1 ID : **6306802194581**
Option 2 ID : **6306802194582**
Option 3 ID : **6306802194583**
Option 4 ID : **6306802194584**
Status : **Answered**
Chosen Option : **3**

Q.68 A user interface has an error rate of 10 errors per 100 interactions. After a redesign, the error rate is reduced to 6 errors per 100 interactions. What is the percentage reduction in the error rate?

Ans

✔ 1. 40%

✘ 2. 60%

✘ 3. 30%

✘ 4. 20%

Question ID : **630680561467**
Option 1 ID : **6306802194819**
Option 2 ID : **6306802194820**
Option 3 ID : **6306802194818**
Option 4 ID : **6306802194817**
Status : **Answered**
Chosen Option : **1**

Q.69 In a Von-Neumann architecture system, the word size is 16 bits and the size of an addressable memory location is 1 byte. What is the maximum addressable memory size of this system?

Ans

✘ 1. 256 KB

✘ 2. 32 KB

✘ 3. 128 KB

✔ 4. 64 KB

Question ID : **630680561445**
Option 1 ID : **6306802194732**
Option 2 ID : **6306802194729**
Option 3 ID : **6306802194731**
Option 4 ID : **6306802194730**
Status : **Answered**
Chosen Option : **3**

Q.70 You are using an oscilloscope to measure the frequency of an AC signal. If you observe four complete cycles of the waveform within a horizontal division, and the time per division setting is 0.5 milliseconds, what is the frequency of the AC signal?

Ans

✘ 1. 500 Hz

✘ 2. 1000 Hz

✔ 3. 125 Hz

✘ 4. 250 Hz

Question ID : **630680561410**
Option 1 ID : **6306802194591**
Option 2 ID : **6306802194592**
Option 3 ID : **6306802194589**
Option 4 ID : **6306802194590**
Status : **Answered**
Chosen Option : **3**

Q.71 If the coverage area of a cellular base station is 10 square kilometers and the service provider wants to cover a city of 200 square kilometers, how many such base stations are needed?

Ans

✗ 1. 40

✗ 2. 10

✓ 3. 20

✗ 4. 30

Question ID : **630680561491**
Option 1 ID : **6306802194916**
Option 2 ID : **6306802194913**
Option 3 ID : **6306802194914**
Option 4 ID : **6306802194915**
Status : **Answered**
Chosen Option : **3**

Q.72 In a system with 3 processes, the time taken to execute the critical section is 5 milliseconds. If each process accesses the critical section 4 times on average during execution, what is the additional turnaround time incurred due to critical section contention?

Ans

✗ 1. 5 milliseconds

✓ 2. 60 milliseconds

✗ 3. 15 milliseconds

✗ 4. 20 milliseconds

Question ID : **630680561477**
Option 1 ID : **6306802194857**
Option 2 ID : **6306802194860**
Option 3 ID : **6306802194858**
Option 4 ID : **6306802194859**
Status : **Answered**
Chosen Option : **2**

Q.73 Given a tie set matrix [1,−1,0,0, 0,1,1,−1, 1,0,−1,1], how many branches are in the graph?

Ans

✓ 1. 4

✗ 2. 6

✗ 3. 3

✗ 4. 5

Question ID : **630680561438**
Option 1 ID : **6306802194702**
Option 2 ID : **6306802194704**
Option 3 ID : **6306802194701**
Option 4 ID : **6306802194703**
Status : **Answered**
Chosen Option : **3**

Q.74 Consider two matrices A and B, where A is $3x^2$ and B is $2x^3$. If the first row of A is [1, 2] and the first column of B is [3, 4], what is the value of the first element of the resulting matrix after multiplying A and B?

Ans

✗ 1. 13

✓ 2. 11

✗ 3. 14

✗ 4. 17

Question ID : **630680561429**
Option 1 ID : **6306802194666**
Option 2 ID : **6306802194665**
Option 3 ID : **6306802194667**
Option 4 ID : **6306802194668**
Status : **Answered**
Chosen Option : **2**

Q.75 In a TTL logic gate, if the LOW-level output voltage (V_OL) is 0.4V, what is the maximum acceptable LOW-level input voltage (V_IL) for proper operation?

Ans

✓ 1. 0.8V

✗ 2. 1.6V

✗ 3. 1.2V

✗ 4. 0.4V

Question ID : **630680561434**
Option 1 ID : **6306802194686**
Option 2 ID : **6306802194688**
Option 3 ID : **6306802194687**
Option 4 ID : **6306802194685**
Status : **Answered**
Chosen Option : **2**

Q.76 In a deque (double-ended queue) with elements [5, 10, 15, 20], if an operation is performed to insert the element '25' at the front and then delete an element from the rear, what will be the rear element of the deque?

Ans

✗ 1. 15

✓ 2. 20

✗ 3. 25

✗ 4. 10

Question ID : **630680561440**
Option 1 ID : **6306802194709**
Option 2 ID : **6306802194710**
Option 3 ID : **6306802194711**
Option 4 ID : **6306802194712**
Status : **Answered**
Chosen Option : **3**

Q.77 A 6-stage arithmetic pipeline processes a batch of 500 arithmetic operations. The operation latency is 3 ns per stage. If the pipeline is fully efficient (no stalls or idle time), what is the total time taken to complete the batch?

Ans

✔ 1. 3,015 ns

✘ 2. 1,509 ns

✘ 3. 1,503 ns

✘ 4. 2,007 ns

Question ID : **630680561449**
Option 1 ID : **6306802194745**
Option 2 ID : **6306802194746**
Option 3 ID : **6306802194748**
Option 4 ID : **6306802194747**
Status : **Answered**
Chosen Option : **2**

Q.78 For automated impedance control in PCB design, what is the typical target impedance (in ohms) for USB differential signal pairs?

Ans

✘ 1. 45 ohms

✔ 2. 90 ohms

✘ 3. 100 ohms

✘ 4. 120 ohms

Question ID : **630680561416**
Option 1 ID : **6306802194613**
Option 2 ID : **6306802194614**
Option 3 ID : **6306802194615**
Option 4 ID : **6306802194616**
Status : **Answered**
Chosen Option : **2**

Q.79 In an amplitude modulation (AM) system, the carrier power is 100 Watts, and the modulation index is 0.5. What is the total power in the sidebands?

Ans

✘ 1. 25 watts

✔ 2. 50 Watts

✘ 3. 12.5 Watts

✘ 4. 100 Watts

Question ID : **630680561456**
Option 1 ID : **6306802194774**
Option 2 ID : **6306802194775**
Option 3 ID : **6306802194773**
Option 4 ID : **6306802194776**
Status : **Answered**
Chosen Option : **3**

Q.80 An assembler processes an assembly language program with 500 lines, where each line generates, on average, 3 machine instructions. If each machine instruction is 4 bytes long, what is the size of the final machine code output in bytes?

Ans

✗ 1. 4,000 bytes

✗ 2. 2,000 bytes

✗ 3. 1,500 bytes

✓ 4. 6,000 bytes

Question ID : **630680561447**
Option 1 ID : **6306802194739**
Option 2 ID : **6306802194738**
Option 3 ID : **6306802194740**
Option 4 ID : **6306802194737**
Status : **Answered**
Chosen Option : **4**

Q.81 A computer system has a cache memory of 256 KB, a main memory of 8 GB, and a disk storage of 1 TB. If the access times are 2 ns for the cache, 10 ns for the main memory, and 10 ms for the disk, what is the average access time if 80% of the accesses are to the cache, 15% to the main memory, and 5% to the disk?

Ans

✗ 1. 1002.4 ns

✓ 2. 520 ns

✗ 3. 0.52 ns

✗ 4. 501.2 ns

Question ID : **630680561444**
Option 1 ID : **6306802194726**
Option 2 ID : **6306802194728**
Option 3 ID : **6306802194727**
Option 4 ID : **6306802194725**
Status : **Answered**
Chosen Option : **1**

Q.82 If a network firewall blocks 95% of unwanted traffic, and the network receives 1,000 unwanted traffic requests per day, how many unwanted requests are blocked daily by the firewall?

Ans

✗ 1. 50

✓ 2. 950

✗ 3. 1000

✗ 4. 95

Question ID : **630680561489**
Option 1 ID : **6306802194905**
Option 2 ID : **6306802194907**
Option 3 ID : **6306802194908**
Option 4 ID : **6306802194906**
Status : **Answered**
Chosen Option : **1**

Q.83 A company's IT department reports that out of 1,000 emails received, 50 were identified as phishing attempts. What percentage of the emails were phishing attempts?

Ans

✗ 1. 20%

✗ 2. 2%

✓ 3. 5%

✗ 4. 10%

Question ID : **630680561488**
Option 1 ID : **6306802194904**
Option 2 ID : **6306802194901**
Option 3 ID : **6306802194902**
Option 4 ID : **6306802194903**
Status : **Answered**
Chosen Option : **3**

Q.84 A linear accelerator uses RF (radio frequency) electric fields to accelerate electrons. If the frequency of the RF field is 3 GHz and the phase velocity of the wave is the speed of light (approximately 3×108 m/s), what is the wavelength of the RF field?

Ans

✓ 1. 0.1 meters

✗ 2. 10 meters

✗ 3. 1 meter

✗ 4. 0.5 meters

Question ID : **630680561401**
Option 1 ID : **6306802194553**
Option 2 ID : **6306802194556**
Option 3 ID : **6306802194555**
Option 4 ID : **6306802194554**
Status : **Answered**
Chosen Option : **2**

Q.85 For a given optical fiber, if the input pulse width is 1 ns and the dispersion is 4 ps/nm.km, what is the maximum length of the fiber to keep the pulse spreading within 2 ns, assuming a spectral width of 0.5 nm?

Ans

✓ 1. 125 km

✗ 2. 250 km

✗ 3. 100 km

✗ 4. 50 km

Question ID : **630680561425**
Option 1 ID : **6306802194651**
Option 2 ID : **6306802194652**
Option 3 ID : **6306802194650**
Option 4 ID : **6306802194649**
Status : **Answered**
Chosen Option : **3**

Q.86 An isotropic antenna radiates uniformly in all directions with a total power of 100 W. What is the power density at a distance of 10 meters from the antenna?

Ans

✗ 1. $0.3183\ W/m^2$

✗ 2. $0.6366\ W/m^2$

✓ 3. $0.0796\ W/m^2$

✗ 4. $0.1592\ W/m^2$

Question ID : **630680561461**
Option 1 ID : **6306802194795**
Option 2 ID : **6306802194796**
Option 3 ID : **6306802194793**
Option 4 ID : **6306802194794**
Status : **Answered**
Chosen Option : **2**

Q.87 In a semiconductor material, an electron's effective mass (m^*) is given as 0.067 times the free electron mass (me). If the electron is subjected to a force of 2×10^{-19} N, what will be its acceleration? (Hint: Use Newton's second law, F=ma, where F is force, m is mass, and a is acceleration.)

Ans

✗ 1. $6.70\times1014\ m/s^2$

✓ 2. $2.98\times1014\ m/s^2$

✗ 3. $1.34\times1014\ m/s^2$

✗ 4. $4.50\times1014\ m/s^2$

Question ID : **630680561404**
Option 1 ID : **6306802194568**
Option 2 ID : **6306802194565**
Option 3 ID : **6306802194566**
Option 4 ID : **6306802194567**
Status : **Answered**
Chosen Option : **2**

Q.88 You're presented with the octal (base 8) number 527. What is its equivalent decimal value?

Ans

✗ 1. 295

✗ 2. 525

✓ 3. 343

✗ 4. 399

Question ID : **630680561433**
Option 1 ID : **6306802194682**
Option 2 ID : **6306802194684**
Option 3 ID : **6306802194681**
Option 4 ID : **6306802194683**
Status : **Answered**
Chosen Option : **3**

Q.89 Calculate the third derivative of $f(x) = e^{2x}\sin(x)$.

Ans

✗ 1. $e^{2x}(2\sin(x)-4\cos(x))$

✗ 2. $e^{2x}(4\sin(x)+2\cos(x))$

✓ 3. $e^{2x}(4\sin(x)-2\cos(x))$

✗ 4. $e^{2x}(2\sin(x)+4\cos(x))$

Question ID : **630680561395**
Option 1 ID : **6306802194531**
Option 2 ID : **6306802194529**
Option 3 ID : **6306802194532**
Option 4 ID : **6306802194530**
Status : **Answered**
Chosen Option : **4**

Q.90 Given a recursive function with the recurrence relation $T(n)=(T(n/3)+1)/3$, and $T(1)=1$, what is the total number of nodes in the recursion tree when the function is called with $n=27$?

Ans

✗ 1. 121

✓ 2. 40

✗ 3. 39

✗ 4. 27

Question ID : **630680561463**
Option 1 ID : **6306802194804**
Option 2 ID : **6306802194803**
Option 3 ID : **6306802194802**
Option 4 ID : **6306802194801**
Status : **Answered**
Chosen Option : **4**

Q.91 In XHTML, a basic document is structured into three main parts: the declaration, the head, and the body. If a developer spends 30 minutes writing the declaration, 45 minutes on the head, and 75 minutes on the body, what percentage of the total time was spent on the body?

Ans

✗ 1. 70%

✗ 2. 40%

✓ 3. 60%

✗ 4. 50%

Question ID : **630680561483**
Option 1 ID : **6306802194884**
Option 2 ID : **6306802194881**
Option 3 ID : **6306802194883**
Option 4 ID : **6306802194882**
Status : **Answered**
Chosen Option : **4**

Q.92 For a 256-QAM system with a symbol rate of 4000 symbols/second, what is the required bandwidth (in Hz), assuming a raised cosine filter with a roll-off factor of 0.5?

Ans

✗ 1. 12000 Hz

✓ 2. 8000 Hz

✗ 3. 4000 Hz

✗ 4. 6000 Hz

Question ID : **630680561424**
Option 1 ID : **6306802194648**
Option 2 ID : **6306802194647**
Option 3 ID : **6306802194645**
Option 4 ID : **6306802194646**
Status : **Answered**
Chosen Option : **2**

Q.93 In an object-oriented programming language, a class has 3 private attributes, 2 public methods (excluding getters/setters), and 2 private methods. If implementing getters and setters for each private attribute, how many methods will the class have in total?

Ans

✗ 1. 10

✗ 2. 9

✗ 3. 12

✓ 4. 11

Question ID : **630680561451**
Option 1 ID : **6306802194754**
Option 2 ID : **6306802194753**
Option 3 ID : **6306802194756**
Option 4 ID : **6306802194755**
Status : **Answered**
Chosen Option : **2**

Q.94 For a PCB with a 50-ohm single-ended impedance requirement, what is the target trace width (in mils) on a standard 1.6mm FR4 board?

Ans

✓ 1. 20 mils

✗ 2. 10 mils

✗ 3. 40 mils

✗ 4. 30 mils

Question ID : **630680561415**
Option 1 ID : **6306802194610**
Option 2 ID : **6306802194609**
Option 3 ID : **6306802194612**
Option 4 ID : **6306802194611**
Status : **Answered**
Chosen Option : **3**

Q.95 For a vector field $\vec{F}(x,y,z)=yzi\hat{}+xzj\hat{}+xyk\hat{}$, compute the divergence $\vec{\nabla}\cdot F$.

Ans

✗ 1. 2z

✓ 2. 0

✗ 3. x+y+z

✗ 4. Z

Question ID : **630680561397**
Option 1 ID : **6306802194537**
Option 2 ID : **6306802194540**
Option 3 ID : **6306802194538**
Option 4 ID : **6306802194539**
Status : **Answered**
Chosen Option : **2**

Q.96 Given char s1[] = "Programming"; char s2[] = "Pro"; what will be the value of strncmp(s1, s2, 3) in C?

Ans

✓ 1. 0

✗ 2. -1

✗ 3. 1

✗ 4. Depends on the compiler

Question ID : **630680561430**
Option 1 ID : **6306802194669**
Option 2 ID : **6306802194671**
Option 3 ID : **6306802194670**
Option 4 ID : **6306802194672**
Status : **Answered**
Chosen Option : **4**

Q.97 A biometric security system has a False Rejection Rate (FRR) of 1% and a False Acceptance Rate (FAR) of 0.1%. What is the security level of the system based on these rates?

Ans

✗ 1. Low

✓ 2. High

✗ 3. Very High

✗ 4. Moderate

Question ID : **630680561490**
Option 1 ID : **6306802194909**
Option 2 ID : **6306802194911**
Option 3 ID : **6306802194912**
Option 4 ID : **6306802194910**
Status : **Answered**
Chosen Option : **1**

Q.98 A network utilizes a medium access control (MAC) protocol where stations listen before transmitting to avoid collisions. This protocol also incorporates a backoff mechanism for stations that encounter a busy medium. Which of the following protocols best describes this scenario?

Ans

✔ 1. Aloha

✘ 2. Token Ring

✘ 3. Carrier Sense Multiple Access (CSMA)

✘ 4. Carrier Sense Multiple Access with Collision Detection (CSMA/CD)

Question ID : **630680561479**
Option 1 ID : **6306802194865**
Option 2 ID : **6306802194868**
Option 3 ID : **6306802194866**
Option 4 ID : **6306802194867**
Status : **Answered**
Chosen Option : **4**

Q.99 Gauss' Law states that the electric flux through a closed surface is equal to the charge enclosed divided by the permittivity of the medium. What is the electric flux through a closed surface enclosing a charge of 5×10^{-6} C in a vacuum?

Ans

✘ 1. $4.5\times10-5\ Nm^2/C$

✔ 2. $5.6\times10-5\ Nm^2/C$

✘ 3. $5\times10-6\ Nm^2/C$

✘ 4. $6.3\times10-5\ Nm^2/C$

Question ID : **630680561400**
Option 1 ID : **6306802194551**
Option 2 ID : **6306802194550**
Option 3 ID : **6306802194549**
Option 4 ID : **6306802194552**
Status : **Answered**
Chosen Option : **2**

Q.100 In software testing, a cause-effect graph for a module has 5 causes and 3 effects. If each cause can lead to any of the effects, what is the minimum number of test cases needed to cover all cause-effect pairs?

Ans

✘ 1. 5

✘ 2. 8

✘ 3. 3

✔ 4. 15

Question ID : **630680561469**
Option 1 ID : **6306802194826**
Option 2 ID : **6306802194827**
Option 3 ID : **6306802194825**
Option 4 ID : **6306802194828**
Status : **Answered**
Chosen Option : **4**