

Application No	██████████	Registered Photo	Exam Day Photo
Roll No	██████████		
Candidate Name	██████████████████		
Module Name	Computer Science and Applications		
Exam Date	17-Jun-2023		
Exam Batch	09:00-12:00		

1) PART A General Paper

Question No. 1 / Question ID 1703

Marks: 2.00

The following table shows the number of employees in an organization in five different Cities-Delhi, Mumbai, Bengaluru, Hyderabad and Gurgaon with total number of employees being 4260 in the organization, along with the percentage (%) distribution of employees working in four departments -HR, Finance, IT and Accounts. Based on the data in the table answer the questions that follows.

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Hydrabad	-	-	25%	18%	35%
Gurgaon	700	20%	22%	-	20%

Note: 1. Some values are missing in the table (marked as '\_\_\_') that you are expected to calculate if required.

2. Each employee works in only one department.

If number of employees in Bengaluru is 10% less than the number of employees in Hyderabad, then what is the difference between the number of employees who work in Accounts department in these 2 cities?

1. 244
2. 208
3. 194
4. 270
- निम्नलिखित तालिका में पाँच विभिन्न शहरों - दिल्ली, मुम्बई, बेंगलुरु, हैदराबाद और गुड़गाँव में किसी संगठन में कर्मचारियों की संख्या दर्शायी गई है। उस संगठन में कर्मचारियों की कुल संख्या 4260 है। साथ ही, चार विभागों - मानव संसाधन (एचआर), वित्त, आईटी और लेखा में कार्यरत कर्मचारियों के वितरण की प्रतिशतता भी दी गई है। इस तालिका में दिए गए आंकड़ों के आधार पर नीचे दिए गए प्रश्नों के उत्तर दीजिए।

किसी संगठन में कर्मचारियों का शहरवार व्योरा

शहर	कर्मचारियों की संख्या	कर्मचारियों के वितरण की प्रतिशतता			
		एचआर	वित्त	आईटी	लेखा
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मुम्बई	760	15%	-	30%	-
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गुड़गाँव	700	20%	22%	-	20%

नोट:

- (1) तालिका में '\_\_\_\_\_' के रूप में चिह्नित कुछ मान नहीं दिए गए हैं। जिनका परिकलन, यदि आवश्यक हो, किया जाना अपेक्षित है।
- (2) प्रत्येक कर्मचारी केवल एक ही विभाग में कार्यरत है।

यदि बेंगलुरु में कर्मचारियों की संख्या हैदराबाद में कर्मचारियों की संख्या की तुलना में 10 प्रतिशत कम है, तो इन दो शहरों में लेखा विभाग में कार्यरत कर्मचारियों और इन दो शहरों में वित्त विभाग में कार्यरत कर्मचारियों की संख्या के बीच का अंतर कितना है?

1. 244
2. 208
3. 194
4. 270
- ☐ 1
- ☐ 2
- ☐ 3 (Chosen Option)
- ☐ 3 (Chosen Option)
- ☐ 4
- ☐ 4

The following table shows the number of employees in an organization in five different Cities-Delhi, Mumbai, Bangaluru, Hyderabad and Gurgaon with total number of employees being 4260 in the organization, along with the percentage (%) distribution of employees working in four departments -HR, Finance, IT and Accounts. Based on the data in the table answer the questions that follows.

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Gurgaon	700	20%	22%	-	20%

Note: 1. Some values are missing in the table (marked as '-') that you are expected to calculate if required.

2. Each employee works in only one department.

If in Delhi, number of employees who work in Accounts department are 40% more than the number of employees who work in HR department, then what is the number of employees who work in IT department in Delhi?

1. 266
2. 306
3. 352
4. 294
- निम्नलिखित तालिका में पाँच विभिन्न शहरों - दिल्ली, मुम्बई, बेंगलुरु, हैदराबाद और गुड़गाँव में किसी संगठन में कर्मचारियों की संख्या दर्शायी गई है। उस संगठन में कर्मचारियों की कुल संख्या 4260 है। साथ ही, चार विभागों - मानव संसाधन (एचआर), वित्त, आईटी और लेखा में कार्यरत कर्मचारियों के वितरण की प्रतिशतता भी दी गई है। इस तालिका में दिए गए आंकड़ों के आधार पर नीचे दिए गए प्रश्नों के उत्तर दीजिए।

किसी संगठन में कर्मचारियों का शहरवार व्योरा

शहर	कर्मचारियों की संख्या	कर्मचारियों के वितरण की प्रतिशतता			
		एचआर	वित्त	आईटी	लेखा
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मुम्बई	760	15%	-	30%	-
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हैदराबाद	-	-	25%	18%	35%
गुड़गाँव	700	20%	22%	-	20%

- नोट:
- (1) तालिका में '-' के रूप में चिह्नित कुछ मान नहीं दिए गए हैं। जिनका परिकलन, यदि आवश्यक हो, किया जाना अपेक्षित है।
- (2) प्रत्येक कर्मचारी केवल एक ही विभाग में कार्यरत है।

यदि दिल्ली में लेखा विभाग में कार्यरत कर्मचारियों की संख्या एचआर विभाग में कार्यरत कर्मचारियों की संख्या की तुलना में 40% अधिक है, तो दिल्ली में आईटी विभाग में कार्यरत कर्मचारियों की संख्या कितनी है?

1. 266
2. 306
3. 352
4. 294
- ☐ 1
- ☐ 2
- ☒ 3 (Chosen Option)
- ☐ 4



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Hydrabad	-	-	25%	18%	35%
Gurgaon	700	20%	22%	-	20%

Note: 1. Some values are missing in the table (marked as '-') that you are expected to calculate if required.

2. Each employee works in only one department.

If number of employees who work in Accounts department in Mumbai is 38 more than the number of employees who work in IT department in Gurgaon, then what is the number of employees who work in Finance department in Mumbai?

1. 114
2. 120
3. 98
4. 124

निम्नलिखित तालिका में पाँच विभिन्न शहरों - दिल्ली, मुम्बई, बेंगलुरु, हैदराबाद और गुड़गाँव में किसी संगठन में कर्मचारियों की संख्या दर्शायी गई है। उस संगठन में कर्मचारियों की कुल संख्या 4260 है। साथ ही, चार विभागों - मानव संसाधन (एचआर), वित्त, आईटी और लेखा में कार्यरत कर्मचारियों के वितरण की प्रतिशतता भी दी गई है। इस तालिका में दिए गए आंकड़ों के आधार पर नीचे दिए गए प्रश्नों के उत्तर दीजिए।

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शहर	कर्मचारियों की संख्या	कर्मचारियों के वितरण की प्रतिशतता			
		एचआर	वित्त	आईटी	लेखा
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- (2) प्रत्येक कर्मचारी केवल एक ही विभाग में कार्यरत है।

यदि मुम्बई में लेखा विभाग में कार्यरत कर्मचारियों की संख्या गुड़गाँव में आईटी विभाग में कार्यरत कर्मचारियों की संख्या की तुलना में 38 अधिक है, तो मुम्बई में वित्त विभाग में कार्यरत कर्मचारियों की संख्या कितनी है?

1. 114
  2. 120
  3. 98
  4. 124
- ☐ 1  
☐ 2  
☐ 3 (Chosen Option)  
☐ 4



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Note: 1. Some values are missing in the table (marked as '-') that you are expected to calculate if required.

2. Each employee works in only one department.

What is the total number of employees in Mumbai and Gurgaon who work in IT department?

1. 482
2. 452
3. 570
4. 494

निम्नलिखित तालिका में पाँच विभिन्न शहरों - दिल्ली, मुम्बई, बेंगलुरु, हैदराबाद और गुड़गाँव में किसी संगठन में कर्मचारियों की संख्या दर्शायी गई है। उस संगठन में कर्मचारियों की कुल संख्या 4260 है। साथ ही, चार विभागों - मानव संसाधन (एचआर), वित्त, आईटी और लेखा में कार्यरत कर्मचारियों के वितरण की प्रतिशतता भी दी गई है। इस तालिका में दिए गए आंकड़ों के आधार पर नीचे दिए गए प्रश्नों के उत्तर दीजिए।

किसी संगठन में कर्मचारियों का शहरवार व्योरा

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- (2) प्रत्येक कर्मचारी केवल एक ही विभाग में कार्यरत है।

मुम्बई और गुड़गाँव में आईटी विभाग में कार्यरत कर्मचारियों की कुल संख्या कितनी है?

1. 482
2. 452
3. 570
4. 494

- ☐ 1  
1
- ☐ 2  
2
- ☐ 3 (Chosen Option)  
3 (Chosen Option)
- ☐ 4  
4

Question No. 5 / Question ID 1704

Marks: 2.00

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Gurgaon	700	20%	22%	-	20%

Note: 1. Some values are missing in the table (marked as '-') that you are expected to calculate if required.

2. Each employee works in only one department.

If the number of employees in Bengaluru is 10% less than the number of employees in Hyderabad, then the total number of employees who work in Finance and Accounts departments of the organization is more than 415 in exactly \_\_\_\_\_ cities.

1. two  
2. three  
3. four  
4. five

निम्नलिखित तालिका में पाँच विभिन्न शहरों - दिल्ली, मुम्बई, बेंगलुरु, हैदराबाद और गुड़गाँव में किसी संगठन में कर्मचारियों की संख्या दर्शायी गई है। उस संगठन में कर्मचारियों की कुल संख्या 4260 है। साथ ही, चार विभागों - मानव संसाधन (एचआर), वित्त, आईटी और लेखा में कार्यरत कर्मचारियों के वितरण की प्रतिशतता भी दी गई है। इस तालिका में दिए गए आंकड़ों के आधार पर नीचे दिए गए प्रश्नों के उत्तर दीजिए।

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शहर	कर्मचारियों की संख्या	कर्मचारियों के वितरण की प्रतिशतता			
		एचआर	वित्त	आईटी	लेखा
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नोट:

(1) तालिका में '\_\_\_\_\_' के रूप में चिह्नित कुछ मान नहीं दिए गए हैं। जिनका परिकलन, यदि आवश्यक हो, किया जाना अपेक्षित है।

(2) प्रत्येक कर्मचारी केवल एक ही विभाग में कार्यरत है।

यदि बेंगलुरु में कर्मचारियों की संख्या हैदराबाद में कर्मचारियों की संख्या की तुलना में 10% कम है, तो संगठन में वित्त और लेखा विभाग में कार्यरत कर्मचारियों की कुल संख्या ठीक \_\_\_\_\_ शहरों में 415 से अधिक है।

1. दो  
2. तीन  
3. चार  
4. पाँच
- ☐ 1  
☐ 2  
☐ 3 (Chosen Option)  
☐ 3 (Chosen Option)  
☐ 4  
☐ 4



Match List I with List II

Match List I with List II

सूची I के साथ सूची II का मिलान कीजिए।

Online teaching tool		Advantages for Teachers	
A.	Learning Management System (LMS)	I.	Encouraging student engagement and collaboration fostering critical thinking and problem solving
B.	Video conferencing	II.	Creating and administering assessments quickly and easily automating grading and feedback
C.	Discussion forums	III.	Streamlining course administration, managing student record and grades
D.	Online Assessment platform	IV.	Delivering engaging and interactive class sessions connecting with remote learners

सूची I (ऑनलाइन शिक्षण उपकरण)		सूची II (शिक्षकों के लिए लाभ)	
A.	अधिगम प्रबंधन प्रणाली (एलएमएस)	I.	छात्र की तल्लीनता और सहयोग बढ़ाना, समालोचनात्मक सोच और समस्या समाधान को प्रोत्साहित करना
B.	विडियो कॉन्फ्रेंसिंग	II.	मूल्यांकन तेजी से और शीघ्रता से सृजित और प्रशासित करना, ग्रेडिंग और फीडबैक स्वचालित करना
C.	चर्चा मंच	III.	पाठ्यक्रम प्रचालन को सरल बनाना, छात्रों के रिकॉर्ड और ग्रेड का प्रबंधन करना
D.	ऑनलाइन मूल्यांकन मंच	IV.	रोचक और अन्तः क्रियात्मक कक्षा सत्र करना, दूरस्थ अधिगमकर्ताओं के साथ जुड़ना

Choose the correct answer from the options given below:

नीचे दिए गए विकल्पों में से सही उत्तर का चयन कीजिए।

- 1. A-IV, B-III, C-I, D-II
- 2. A-I, B-IV, C-II, D-III
- 3. A-II, B-III, C-IV, D-I
- 4. A-III, B-IV, C-I, D-II

- 1. A-IV, B-III, C-I, D-II
- 2. A-I, B-IV, C-II, D-III
- 3. A-II, B-III, C-IV, D-I
- 4. A-III, B-IV, C-I, D-II

- ☐ 1 (Chosen Option)
- ☐ 1 (Chosen Option)
- ☐ 2
- ☐ 2
- ☐ 3
- ☐ 3
- ☐ 4
- ☐ 4

Question No. 7 / Question ID 1743

Marks: 2.00

As per the recommendation of the National Education Policy (2020), the Indian Standards of skills will aligned with the International Standard Classification of occupations of

- 1. UNDP
- 2. UNESCO
- 3. ILO
- 4. ITU

राष्ट्रीय शिक्षा नीति (2020) की सिफारिशों के अनुसार कौशल के भारतीय मानकों को निम्नलिखित में से किसके व्यवसायों के अंतर्राष्ट्रीय मानक वर्गीकरण के साथ संरेखित किया जाएगा।

- 1. यूएनडीपी
- 2. यूनेस्को
- 3. आईएलओ
- 4. आईटीयू

- ☐ 1
- ☐ 1
- ☐ 2
- ☐ 2
- ☐ 3 (Chosen Option)
- ☐ 3 (Chosen Option)
- ☐ 4
- ☐ 4

Question No. 8 / Question ID 1738

Marks: 2.00

Given below are two statements:

**Statement I:** Cultural eutrophication is caused by increased nutrient input into water body mainly due to human activities

**Statement II:** Cultural eutrophication deaccelerate the 'aging' of a water body enormously over natural rates.

In the light of the above statements, choose the most appropriate answer from the options given below.

1. Both Statement I and Statement II are correct
2. Both Statement I and Statement II are incorrect
3. Statement I is correct but Statement II is incorrect
4. Statement I is incorrect but Statement II is correct

नीचे दो कथन दिए गए हैं:

**कथन I :** कल्चरल यूट्रोफिकेशन मुख्यतया मानवीय क्रियाकलापों से जल निकाय में वर्धित पोषक तत्वों की आगत के कारण होता है।

**कथन II :** कल्चरल यूट्रोफिकेशन, जल निकायों की 'एजिंग' को प्राकृतिक दर की तुलना में अत्यधिक तीव्र गति से कम करता है।

उपरोक्त कथन के आलोक में, नीचे दिए विकल्पों में से सबसे उपयुक्त उत्तर का चयन कीजिए।

1. कथन I और II दोनों सही हैं
2. कथन I और II दोनों गलत हैं
3. कथन I सही है, लेकिन कथन II गलत है
4. कथन I गलत है, लेकिन कथन II सही है

☐ 1 (Chosen Option)

1 (Chosen Option)

☐ 2

2

☐ 3

3

☐ 4

4

Question No. 9 / Question ID 1711

Marks: 2.00

Given below are two statements:

**Statement I:** A Cohort is a population whose members have some specific characteristics in common.

**Statement II:** In a prospective study , the researcher relies on people's memories and recollections of the past.

In the light of the above statements, choose the correct answer from the options given below.

1. Both Statement I and Statement II are true
2. Both Statement I and Statement II are false
3. Statement I is true but Statement II is false
4. Statement I is false but Statement II is true

नीचे दो कथन दिए गए हैं:

**कथन I :** सहगण (कोहोर्ट) वह जनसंख्या है जिसके सदस्यों में कुछ विशिष्ट अभिलक्षण समान होती हैं।

**कथन II :** भविष्यालक्षी अध्ययन में अनुसंधानकर्ता लोगों की स्मृतिओं और अनुस्मरणों पर निर्भर रहता है।

उपरोक्त कथन के आलोक में, नीचे दिए गए विकल्पों में से सही उत्तर का चयन कीजिए।

1. कथन I और II दोनों सत्य हैं
2. कथन I और II दोनों असत्य हैं
3. कथन I सत्य है, लेकिन कथन II असत्य है
4. कथन I असत्य है, लेकिन कथन II सत्य है

☐ 1

1

☐ 2 (Chosen Option)

2 (Chosen Option)

- ☐ 3  
3  
☐ 4  
4

Question No. 10 / Question ID 1726

Marks: 2.00

Arrange the following group of terms in order of increasing intension:

निम्नलिखित शब्द समूह को गुणार्थ के आरोहीक्रम में व्यवस्थित कीजिए।

- A. Tiger  
B. Mammal  
C. Feline  
D. Animal

- A. बाघ  
B. स्तनपायी  
C. विडाल  
D. पशु

Choose the correct answer from the options given below:

नीचे दिए गए विकल्पों में से सही उत्तर का चयन कीजिए।

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

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

- ☐ 1  
1  
☐ 2  
2  
☐ 3 (Chosen Option)  
3 (Chosen Option)  
☐ 4  
4

Question No. 11 / Question ID 1745

Marks: 2.00

Given below are two statements:

**Statement I:** Reputed scholars like Panini and Chanakya had their education from Nalanda university

**Statement II:** Thakshashila was a university known for its education in Indian arts and science especially medicine

In the light of the above statements, choose the most appropriate answer from the options given below.

1. Both Statement I and Statement II are true  
2. Both Statement I and Statement II are false  
3. Statement I is true but Statement II is false  
4. Statement I is false but Statement II is true

नीचे दो कथन दिए गए हैं: एक अभिकथन (Assertion A) के रूप में लिखित है तो दूसरा उसके कारण (Reason R) के रूप में:

**कथन I :** पाणिनि और चाणिक्य जैसे प्रसिद्ध विद्वानों ने नालंदा विश्वविद्यालय से अपनी शिक्षा ग्रहण की थी।

**कथन II :** तक्षशिला भारतीय कला और विज्ञान विशेषरूप से चिकित्सा में अपनी शिक्षा के लिए जाना जाता था।

उपरोक्त कथन के आलोक में, नीचे दिए गए विकल्पों में से सही उत्तर का चयन कीजिए।

1. A और R दोनों सत्य हैं और R, A की सही व्याख्या है  
2. A और R दोनों सत्य हैं, लेकिन R, A की सही व्याख्या नहीं है  
3. A सत्य है, लेकिन R असत्य है  
4. A असत्य है, लेकिन R सत्य है

- ☐ 1  
1  
☐ 2 (Chosen Option)  
2 (Chosen Option)  
☐ 3  
3  
☐ 4  
4

Question No. 12 / Question ID 1714

Marks: 2.00



Given below are two statements:

**Statement I:** The risk of rejecting the null hypothesis when it should be confirmed, is more at 0.05 p-level than at 0.01 p-level

**Statement II:** The risk of committing a type-I error is lower at 0.05 p-level than at 0.01 p-level

In the light of the above statements, choose the correct answer from the options given below.

1. Both Statement I and Statement II are true
2. Both Statement I and Statement II are false
3. Statement I is true but Statement II is false
4. Statement I is false but Statement II is true

नीचे दो कथन दिए गए हैं:

**कथन I :** शून्य परिकल्पना की पुष्टि किए जाने के बजाय उसे अस्वीकार करने का जोखिम 0.01 p-स्तर की तुलना में 0.05 p-स्तर पर अधिक होता है।

**कथन II :** टाइप-I त्रुटि करने का जोखिम 0.01 p-स्तर की तुलना में 0.05 p-स्तर पर कम होता है।

उपरोक्त कथन के आलोक में नीचे दिए गए विकल्पों में से सही उत्तर का चयन कीजिए:

1. कथन I और II दोनों सत्य हैं
2. कथन I और II दोनों असत्य हैं
3. कथन I सत्य है, लेकिन कथन II असत्य है
4. कथन I असत्य है, लेकिन कथन II सत्य है

☐ 1 (Chosen Option)

☐ 2

☐ 3

☐ 4

Question No. 13 / Question ID 1720

Marks: 2.00

Given below are two statements:

**Statement I:** The electronic space of Internet has failed to displace the Institutional space in a society even an iota.

**Statement II:** The Internet communication has broken down the hierarchies of race, ethnicity and gender

In the light of the above statements, choose the correct answer from the options given below.

1. Both Statement I and Statement II are true
2. Both Statement I and Statement II are false
3. Statement I is true but Statement II is false
4. Statement I is false but Statement II is true

नीचे दो कथन दिए गए हैं:

**कथन I :** इंटरनेट का इलेक्ट्रॉनिकी जगह (स्पेस) समाज में संस्थागत जगह को किञ्चित मात्र विस्थापित करने में असफल रहा है।

**कथन II :** ईंटरनेट सम्प्रेषण ने नस्ल, नृजातीयता और लिंग की सोपानिकी को नष्ट कर दिया है।

उपरोक्त कथन के आलोक में, नीचे दिए गए विकल्पों में से सही उत्तर का चयन कीजिए:

1. कथन I और II दोनों सत्य हैं
2. कथन I और II दोनों असत्य हैं
3. कथन I सत्य हैं, लेकिन कथन II असत्य है
4. कथन I असत्य हैं, लेकिन कथन II सत्य है

☐ 1

- ☐ 2 (Chosen Option)
- ☐ 2 (Chosen Option)
- ☐ 3
- ☐ 3
- ☐ 4
- ☐ 4

**Question No. 14 / Question ID 1725**

Marks: 2.00

A passenger train running at the speed of 75 km/hr leaves the railway station 9 hours after a goods train leaves and overtakes it in 6 hours. The speed of the goods train is

1. 35 km/hr
2. 32 km/hr
3. 30 km/hr
4. 28 km/hr

75 किमी/घं. की गति से चलने वाली सवारी गाड़ी किसी मालगाड़ी के स्टेशन छूटने के 9 घंटे पश्चात रेलवे स्टेशन छोड़ती है और 6 घंटे में इससे आगे निकल जाती है। मालगाड़ी की गति कितनी है?

1. 35 किमी/घं.
2. 32 किमी/घं.
3. 30 किमी/घं.
4. 28 किमी/घं.

- ☐ 1
- ☐ 1
- ☐ 2
- ☐ 2
- ☐ 3 (Chosen Option)
- ☐ 3 (Chosen Option)
- ☐ 4
- ☐ 4

**Question No. 15 / Question ID 1733**

Marks: 2.00

Given below are two statements:

**Statement I:** A binary number that ends in a 1, e.g 110011, is always an odd decimal number.

**Statement II:** HTML is a set of rules that must be obeyed when transferring files across the Internet

In the light of the above statements, choose the correct answer from the options given below.

1. Both Statement I and Statement II are true
2. Both Statement I and Statement II are false
3. Statement I is true but Statement II is false
4. Statement I is false but Statement II is true

नीचे दो कथन दिए गए हैं:

**कथन I :** 1 में समाप्त होने वाली द्विआधारी संख्या, उदाहरण के रूप में 110011, हमेशा एक विषम दशमलव संख्या होती है।

**कथन II :** HTML नियमों का एक सेट है जिसका इंटरनेट पर फाइलें स्थानांतरित करते समय अवश्य पालन किया जाना चाहिए।

उपरोक्त कथन के आलोक में, नीचे दिए गए विकल्पों में से सही उत्तर का चयन कीजिए।

1. कथन I और II दोनों सत्य हैं
2. कथन I और II दोनों असत्य हैं
3. कथन I सत्य है, लेकिन कथन II असत्य है
4. कथन I असत्य है, लेकिन कथन II सत्य है

- ☐ 1
- ☐ 1
- ☐ 2 (Chosen Option)
- ☐ 2 (Chosen Option)

- ☐ 3  
☐ 3  
☐ 4  
☐ 4

Question No. 16 / Question ID 1735

Marks: 2.00

Match List I with List II

(Security or data loss issues)		(Methods of data recovery or protection)	
A.	Data loss caused by hard disk crash	I.	Anti-spyware software
B.	Introduction of software that self-replicates and can cause data loss	II.	Anti-virus software
C.	reading of illegally accessed documents	III.	Back-up files
D.	Software that records all key presses on your computer without you knowing	IV.	Encryption

Choose the correct answer from the options given below:

1. A-III, B-IV, C-II, D-I
2. A-I, B-II, C-IV, D-III
3. A-III, B-II, C-IV, D-I
4. A-II, B-III, C-IV, D-I

सूची I के साथ सूची II का मिलान कीजिए

सूची I		सूची II	
(सुरक्षा अथवा डेटा क्षति मुद्दे)		(डेटा पुनःप्राप्ति अथवा संरक्षण के उपाय)	
A.	हार्ड डिस्क के ध्वस्त होने के कारण हुई डेटा क्षति	I.	स्पाईवेयर-रोधी साफ्टवेयर
B.	ऐसे साफ्टवेयर की पुनःस्थापना जो स्वयं दोहराता है और डेटा क्षति कर सकता है	II.	वाइरस-रोधी साफ्टवेयर
C.	अवैध अभिगम वाले दस्तावेजों का पाठन	III.	बैक अप फाइलें
D.	ऐसा साफ्टवेयर जो आपकी जानकारी बगैर आपके कम्प्यूटर पर दबाई गई प्रत्येक कुंजी को रिकार्ड करता है	IV.	कोडीकरण

नीचे दिए गए विकल्पों में से सही उत्तर का चयन कीजिए।

1. A-III, B-IV, C-II, D-I
2. A-I, B-II, C-IV, D-III
3. A-III, B-II, C-IV, D-I
4. A-II, B-III, C-IV, D-I

- ☐ 1  
☐ 1  
☐ 2  
☐ 2  
☐ 3  
☐ 3  
☐ 4 (Chosen Option)  
☐ 4 (Chosen Option)

Question No. 17 / Question ID 1724

Marks: 2.00



If A, B and C can complete a piece of work in 3, 5 and 6 days respectively, they together will complete the work in

1.  $1\frac{3}{7}$  days
2.  $2\frac{4}{7}$  days
3.  $1\frac{1}{2}$  days
4.  $2\frac{1}{3}$  days

यदि A, B और C किसी कार्य को क्रमशः 3, 5 और 6 दिन में पूर्ण कर सकते हैं, वे एक साथ मिलकर कार्य को कितने दिनों में पूर्ण करेंगे?

1.  $1\frac{3}{7}$  दिन
  2.  $2\frac{4}{7}$  दिन
  3.  $1\frac{1}{2}$  दिन
  4.  $2\frac{1}{3}$  दिन
- ☐ 1
- ☐ 2 (Chosen Option)
- ☐ 3
- ☐ 4

Question No. 18 / Question ID 1710

Marks: 2.00

Given below are two statements:

**Statement I:** Metacognition is the understanding about one's own use of language.

**Statement II:** Mnemonics is the knowledge about our own thinking processes

In the light of the above statements, choose the most appropriate answer from the options given below.

1. Both Statement I and Statement II are correct
2. Both Statement I and Statement II are incorrect
3. Statement I is correct but Statement II is incorrect
4. Statement I is incorrect but Statement II is correct

नीचे दो कथन दिए गए हैं:

**कथन I :** अधिसंज्ञान (मेटाकॉग्निशन) अपने ही भाषा-प्रयोग की समझ है।

**कथन II :** स्मृति विज्ञान अपनी ही सोचने की प्रक्रिया का ज्ञान है।

उपरोक्त कथन के आलोक में, नीचे दिए गए विकल्पों में से सबसे उपयुक्त उत्तर का चयन कीजिए।

1. कथन I और II दोनों सही हैं
  2. कथन I और II दोनों गलत हैं
  3. कथन I सही है, लेकिन कथन II गलत है
  4. कथन I गलत है, लेकिन कथन II सही है
- ☐ 1
- ☐ 2 (Chosen Option)
- ☐ 3
- ☐ 4

Question No. 19 / Question ID 1712

Marks: 2.00

When participants drop out of a study, leading to change in the nature of the sample, it would cause which of the following threats to internal validity?

1. Selection threat
2. Attrition threat
3. History threat
4. Testing threat

जब प्रतिभागी किसी अध्ययन से बीच में ही बाहर हो जाते हैं, जिससे प्रतिदर्श के स्वरूप में परिवर्तन हो जाता है, तो इससे आंतरिक वैधता को निम्नलिखित में से कौन सा खतरा हो सकता है?

1. चयन संबंधी खतरा
2. क्षयण संबंधी खतरा
3. इतिहास संबंधी खतरा
4. परीक्षण संबंधी खतरा

- ☐ 1  
1
- ☐ 2  
2
- ☐ 3  
3
- ☐ 4 (Chosen Option)  
4 (Chosen Option)

Question No. 20 / Question ID 1729

Marks: 2.00

Identify the formal fallacy committed in the following argument: "Some good actors are not powerful athletes , All professional wrestlers are powerful athletes. Therefore all professional wrestlers are good actors".

1. Exclusive premises
2. Existential fallacy
3. Affirmative conclusion from negative premises
4. Affirming the consequent

निम्नलिखित युक्ति में किये गये आकारिक तर्कदोष की पहचान कीजिए: "कुछ अच्छे अभिनेता शक्तिशाली एथलीट नहीं हैं। सभी व्यावसायिक पहलवान शक्तिशाली एथलीट हैं। इसलिए सभी व्यावसायिक पहलवान अच्छे अभिनेता हैं।"

1. व्यावर्तक आधार वाक्य
2. अस्तित्वपरक तर्क दोष
3. निषेधात्मक आधार वाक्य से सकारात्मक निष्कर्ष
4. फलवाक्य विधान दोष

- ☐ 1  
1
- ☐ 2  
2
- ☐ 3  
3
- ☐ 4 (Chosen Option)  
4 (Chosen Option)

Question No. 21 / Question ID 1715

Marks: 2.00

Given below are two statements

**Statement I:** A dichotomous variable is the one which has more than two categories.

**Statement II:** A nominal variable can have more than two categories.

In the light of the above statements, choose the correct answer from the options given below.

1. Both Statement I and Statement II are true
2. Both Statement I and Statement II are false
3. Statement I is true but Statement II is false
4. Statement I is false but Statement II is true

नीचे दो कथन दिए गए हैं:

**कथन I :** द्विभाजी पर में दो से अधिक श्रेणियां होती हैं।

**कथन II :** नामित चर में दो से अधिक श्रेणियां हो सकती हैं।

उपरोक्त कथन के आलोक में, नीचे दिए गए विकल्पों में से सही उत्तर का चयन कीजिए।

1. कथन I और II दोनों सत्य हैं
2. कथन I और II दोनों असत्य हैं
3. कथन I सत्य है, लेकिन कथन II असत्य है
4. कथन I असत्य है, लेकिन कथन II सत्य है

- ☐ 1  
1
- ☐ 2  
2
- ☒ 3 (Chosen Option)  
3 (Chosen Option)
- ☐ 4  
4

Question No. 22 / Question ID 1730

Marks: 2.00

Which of the following arguments commits the fallacy of contradicted middle such that the middle term, instead of being pervaded by the presence of the major term, is pervaded by the absence of the major term?

1. All things are non eternal because they are knowable.
2. Sound is a quality because it is visible.
3. Fire is cold because it is a substance.
4. Sound is eternal because it is produced.

निम्नलिखित में से किस युक्ति में व्याघाती माध्य तर्क दोष इस प्रकार है कि मध्य पद मुख्य पद की उपस्थिति द्वारा व्याप्त होने की बजाय मुख्य पद की अनुपस्थिति द्वारा व्याप्त होता है?

1. सभी वस्तुएँ गैर-शाश्वत हैं क्योंकि वे ज्ञेय है
2. ध्वनि एक गुण है क्योंकि यह दृश्य होता है
3. अग्नि शीतल होती है क्योंकि यह द्रव्य पदार्थ है
4. ध्वनि शाश्वत होती है क्योंकि यह उत्पन्न होती है

- ☒ 1 (Chosen Option)  
1 (Chosen Option)
- ☐ 2  
2
- ☐ 3  
3
- ☐ 4  
4

Question No. 23 / Question ID 1716

Marks: 2.00



1. Literary taste
2. Materialistic welfare
3. Socialisation
4. Moral cultivation

अभिनव गुप्त के अनुसार सम्प्रेषण के रस सिद्धांत ने श्रोताओं के \_\_\_\_\_ के लिए अवसर प्रदान किया?

1. साहित्यिक आस्वाद
2. भौतिक कल्याण
3. समाजीकरण
4. नैतिक परिष्कार

- ☐ 1  
1  
☐ 2  
2  
☐ 3 (Chosen Option)  
3 (Chosen Option)  
☐ 4  
4

Question No. 24 / Question ID 1731

Marks: 2.00

When you sign up something like a free e-mail account, you may be presented with a CAPTCHA. the most common form of CAPTCHA is an image of several distorted letters. CAPTCHA stands for:

1. "Coverage Analysis and Planning Tool for Computers and Humans Apart."
2. "Completely Automated Public Turing test to tell Computers and Humans Apart"
3. "Completely Applied Parallel Technologies for Communication and Hardware Apart".
4. "Comparable Additional Protected Turing test to cell Computers and Humans Apart".

जब आप निःशुल्क ईमेल खाता जैसी किसी सुविधा को स्वीकार करते हैं, तो आपके समक्ष एक कैप्चा (सीएपीटीसीएचए) प्रस्तुत किया जा सकता है। इस कैप्चा का सर्वाधिक सामान्य रूप अनेक विकृत अक्षरों की एक छवि है। कैप्चा का अर्थ निम्न में से क्या है?

1. कवरेज एनालिसिस एंड प्लानिंग टूल फॉर कंप्यूटर्स एंड ह्यूमंस अपार्ट
2. कंप्लीटली ऑटोमेटेड ट्यूरिंग टेस्ट टू टेल कंप्यूटर्स एंड ह्यूमंस अपार्ट
3. कंप्लीटली एप्लाइड पैरेलल टेक्नॉलाजीस फॉर कम्युनिकेशन एंड हार्डवेयर अपार्ट
4. कंपेरेबल एडीशनल प्रोटेक्टेड ट्यूरिंग टेस्ट टू टेल कंप्यूटर्स एंड ह्यूमंस अपार्ट

- ☐ 1  
1  
☐ 2 (Chosen Option)  
2 (Chosen Option)  
☐ 3  
3  
☐ 4  
4

Question No. 25 / Question ID 1713

Marks: 2.00

1. 8
2. 12
3. 14
4. 18

साहित्यिक चोरी, सामान्य ज्ञान और सांयोगिक शब्दों के बारे में यूजीसी विनियम 2018 के अनुसार, साहित्यिक चोरी का पता लगाने के लिए समानता की जाँच करते समय कितने क्रमागत शब्दों को बाहर (एक्सक्लूड) किया जाएगा?

1. 8
  2. 12
  3. 14
  4. 18
- ☐ 1
- ☐ 2
- ☐ 3 (Chosen Option)
- ☐ 4

Question No. 26 / Question ID 1737

Marks: 2.00

What is the correct increasing order of the contribution to the global warming by the following gases?

- A. Methane ( $\text{CH}_4$ )
- B. Carbon Dioxide ( $\text{CO}_2$ )
- C. Nitrous oxide ( $\text{N}_2\text{O}$ )

Choose the correct answer from the options given below:

1. A, B, C
2. C, A, B
3. B, A, C
4. B, C, A

वैश्विक तापन में निम्नलिखित गैसों के योगदान का सही आरोही क्रम कौन-सा है?

- A. मीथेन ( $\text{CH}_4$ )
- B. कार्बन डाईऑक्साइड ( $\text{CO}_2$ )
- C. नाइट्रस ऑक्साइड ( $\text{N}_2$ )

नीचे दिए गए विकल्पों में से सही उत्तर का चयन कीजिए:

1. A, B, C
  2. C, A, B
  3. B, A, C
  4. B, C, A
- ☐ 1 (Chosen Option)
- ☐ 2
- ☐ 3
- ☐ 4

Question No. 27 / Question ID 1706

Marks: 2.00

Which of the following are the interrelated phases created by John Keller for stimulating and sustaining learner's motivation in the teaching and learning process?

- A. Attention
- B. Authority
- C. Relevance
- D. Confidence
- E. Satisfaction

Choose the most appropriate answer from the options given below:

- 1. A, C, D and E only
- 2. B, D and E only
- 3. A, C and D only
- 4. B and C only

निम्नलिखित में से कौन-से शिक्षण और अधिगम प्रक्रिया में अधिगमकर्ता के अभिप्रेरण को बढ़ाने और बनाए रखने के लिए जॉन केलर द्वारा सृजित परस्पर संबंधित चरण है?

- A. ध्यान
- B. प्राधिकार
- C. प्रासंगिकता
- D. आत्मविश्वास
- E. संतोष

नीचे दिए गए विकल्पों में से सबसे उपयुक्त उत्तर का चयन कीजिए।

- 1. केवल A, C, D और E
- 2. केवल B, D और E
- 3. केवल A, C और D
- 4. केवल B और C

- ☐ 1 (Chosen Option)
- ☐ 1 (Chosen Option)
- ☐ 2
- ☐ 2
- ☐ 3
- ☐ 3
- ☐ 4
- ☐ 4

Question No. 28 / Question ID 1721

Marks: 2.00

Determine the next term in the following number series संख्या श्रृंखला में आगामी पद ज्ञात करें

3,15,35,63,?,.....

3, 15, 35, 63 ?

- 1. 89
- 2. 91
- 3. 99
- 4. 106
- 1. 89
- 2. 91
- 3. 99
- 4. 106
- ☐ 1
- ☐ 1
- ☐ 2 (Chosen Option)
- ☐ 2 (Chosen Option)
- ☐ 3
- ☐ 3
- ☐ 4
- ☐ 4

Question No. 29 / Question ID 1727

Marks: 2.00



Given below are two statements.

**Statement I:** A valid deductive argument that also has all true premises is called a "sound" argument.

**Statement II:** A strong inductive argument that has all true premises is called a "cogent" argument.

In the light of the above statements, choose the most appropriate answer from the options given below.

1. Both Statement I and Statement II are correct
2. Both Statement I and Statement II are incorrect
3. Statement I is correct but Statement II is incorrect
4. Statement I is incorrect but Statement II is correct

नीचे दो कथन दिए गए हैं:

**कथन I :** वह वैद्य निगमनात्मक युक्ति, जिसमें सभी आधार वाक्य सत्य होते हैं, 'ठोस' युक्ति कहलाती है।

**कथन II :** वह दृढ़ आगमनात्मक युक्ति जिसमें सभी आधारवाक्य सत्य होते हैं, 'संगत' युक्ति कहलाती है।

उपरोक्त कथन के आलोक में, नीचे दिए गए विकल्पों में से सबसे उपयुक्त उत्तर का चयन कीजिए।

1. कथन I और II दोनों सही हैं
2. कथन I और II दोनों लगत हैं
3. कथन I सही है, लेकिन कथन II गलत है
4. कथन I गलत है, लेकिन कथन II सही है

- ☐ 1  
1
- ☐ 2 (Chosen Option)  
2 (Chosen Option)
- ☐ 3  
3
- ☐ 4  
4

You and your friends decided to go to Goa after you finish your finals. However, your demanding parents set a couple of conditions to join your friends (See MS-EXCEL spreadsheet below)

	A	B	C	D
1	Category of condition	Minimal results needed	Actual results	Allowed (Yes/No)
2	Hours spent on homework weekly	2	3	
3	Midterm score	70	68	
4	Final exam score	75	77	

Imagine your parents would care about exams (only Midterm score and Final exam score conditions are relevant). Choose one option/formula that you can use for cell D2 to answer the question: will you be able to join your friends with the results given?

1. =IF (C3>=B3, IF (C4>B4, "Yes", "No"), "No")
2. =IF (AND (C3>=B3, C4>=B4), "Yes", "No")
3. =IF (C3:C4>=B3: B4, "Yes", "No")
4. =IF(OR (C3 >= B3, C4>=B4), "Yes", "No")

वार्षिक परीक्षा समाप्त होने के बाद आप और आपके मित्रों ने गोवा जाने का निर्णय किया। तथापि आपके कठोर माता-पिता ने आपको अपने मित्रों के साथ जाने की अनुमति देने के लिए कुछ शर्तें रखी (निम्न एमएस-एक्सेल स्प्रेडशीट देखें)

	A	B	C	D
1	शर्त की श्रेणी	न्यूनतम आवश्यक परिणाम	वास्तविक परिणाम	अनुमति प्रदत्त (हां/नहीं)
2	प्रतिसप्ताह गृहकार्य पर व्यय घंटे	2	3	
3	मध्यावधि अंक	70	68	
4	अंतिम परीक्षा अंक	75	77	

कल्पना कीजिए कि आपके माता-पिता को केवल परीक्षा की चिंता है (केवल मध्यावधि अंक व अंतिम परीक्षा के अंक की शर्त प्रासंगिक है)। एक ऐसा विकल्प/सूत्र चुनिए जिसे आप निम्न प्रश्न का उत्तर देने के लिए प्रकोष्ठ D2 में प्रयोग कर सकें। क्या आप दिए गए परिणामों से अपने मित्रों के साथ जा सकेंगे?

1. = IF (C3 >= B3, IF (C4 > B4, 'हां', 'नहीं'), 'नहीं')
2. = IF (AND (C3 >= B3, C4 >= B4), 'हां', 'नहीं')
3. = IF (C3 : C4 >= B3 : B4, 'हां', 'नहीं')
4. = IF (OR (C3 >= B3, C4>= B4), 'हां', 'नहीं')

- ☐ 1
- ☐ 2
- ☒ 3 (Chosen Option)
- ☐ 4

Question No. 31 / Question ID 1723

Marks: 2.00

If  $x = 0.25$  and  $y = 0.16$ , the value of the expression  $\frac{y}{x} + \sqrt{x}\sqrt{y} - xy$  is

1. 0.6
2. 0.8
3. 0.45
4. 0.58

यदि  $x = 0.25$  और  $y = 0.16$  है तो व्यंजक  $\frac{y}{x} + \sqrt{x}\sqrt{y} - xy$  का मान क्या होगा?

1. 0.6
2. 0.8
3. 0.45
4. 0.58

- ☐ 1
- ☐ 2
- ☐ 3 (Chosen Option)
- ☐ 3 (Chosen Option)
- ☐ 4
- ☐ 4

Question No. 32 / Question ID 1719

Marks: 2.00

Given below are two statements:

**Statement I:** There is an argument that the emergence of cable and television audiences has brought in more personalised and interactive media culture.

**Statement II:** Within an integrated communication system, messages do not acquire communicability and socialisation.

In the light of the above statements, choose the correct answer from the options given below.

1. Both Statement I and Statement II are true
2. Both Statement I and Statement II are false
3. Statement I is true but Statement II is false

4. Statement I is false but Statement II is true

नीचे दो कथन दिए गए हैं:

**कथन I :** एक युक्ति है कि केबल और टेलीविजन के दर्शकों के आविर्भाव से अधिक वैयक्तिक और अन्तः क्रियात्मक मीडिया संस्कृति की शुरुआत हुई है।

**कथन II :** एकीकृत सम्प्रेषण प्रणाली के भीतर संदेशों में संप्रेषणीयता और समाजीकरण नहीं होते हैं।

उपरोक्त कथन के आलोक में, नीचे दिए गए विकल्पों में से सही उत्तर का चयन कीजिए।

1. कथन I और II दोनों सत्य हैं
2. कथन I और II दोनों असत्य हैं
3. कथन I सत्य है, लेकिन कथन II असत्य है
4. कथन I असत्य है, लेकिन कथन II सत्य है

- ☐ 1
- ☐ 1
- ☐ 2 (Chosen Option)
- ☐ 2 (Chosen Option)
- ☐ 3
- ☐ 3
- ☐ 4
- ☐ 4

Question No. 33 / Question ID 1739

Marks: 2.00

A photovoltaic array is

प्रकाश वोल्टीय सारणी।

1. a single solar cell
2. a single solar module
3. a single solar panel
4. combination of solar panels

1. एक एकल सौर सेल है
2. एक एकल सौर माड्यूल है
3. एक एकल सौर पैनल है
4. सौर पैनलों का संयोजन है

- ☐ 1
- ☐ 1
- ☐ 2
- ☐ 2
- ☐ 3
- ☐ 3
- ☐ 4 (Chosen Option)
- ☐ 4 (Chosen Option)

Question No. 34 / Question ID 1744

Marks: 2.00



Find out the chronological order of the following open universities in India.

- A. Karnatak state open university
- B. Netaji Subhash open university
- C. UP Rajarshi Tandon open university
- D. Madhya Pradesh Bhoj open university
- E. Nalanda open university

Choose the correct answer from the options given below:

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

भारत में निम्नलिखित मुक्त विश्वविद्यालयों के कालक्रम के अनुसार क्रमबद्ध कीजिए।

- A. कर्नाटक राज्य मुक्त विश्वविद्यालय
- B. नेता जी सुभाष मुक्त विश्वविद्यालय
- C. उत्तर प्रदेश राजर्षि टंडन मुक्त विश्वविद्यालय
- D. मध्यप्रदेश भोज मुक्त विश्वविद्यालय
- E. नालंदा मुक्त विश्वविद्यालय

नीचे दिए गए विकल्पों में से सही उत्तर का चयन कीजिए।

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

- ☐ 1
- ☐ 2 (Chosen Option)
- ☐ 3
- ☐ 4

Question No. 35 / Question ID 1722

Marks: 2.00

In a certain coding scheme , 'WOMEN' is coded as '65'. How will the 'CHILDREN' be coded in this scheme?

- 1. 178
- 2. 143
- 3. 116
- 4. 78

किसी कूटलेखन योजना में, 'WOMEN' को '65' के रूप में कूटरचित किया गया है। 'CHILDREN' को इस योजना में कैसे कूटरचित किया जाएगा?

- 1. 178
  - 2. 143
  - 3. 116
  - 4. 78
- ☐ 1
  - ☐ 2
  - ☐ 3
  - ☐ 4 (Chosen Option)

Question No. 36 / Question ID 1707

Marks: 2.00

The process of comparing a student's performance against his/her previous performance is known as:

1. Diagnostic evaluation
2. Summative Assessment
3. Ipsative Assessment
4. Informal Assessment

किसी छात्र के प्रदर्शन की उसके पूर्व प्रदर्शन से तुलना करने की प्रक्रिया को क्या कहा जाता है?

1. नैदानिक मूल्यांकन
2. समाकलनात्मक आकलन
3. स्वमानक आकलन
4. अनौपचारिक आकलन

- ☐ 1  
1
- ☐ 2  
2
- ☐ 3 (Chosen Option)  
3 (Chosen Option)
- ☐ 4  
4

Question No. 37 / Question ID 1728

Marks: 2.00

Which informal fallacy is committed in the following statement- "American Indians are disappearing. That man is an American Indian. Therefore that man is disappearing"?

1. Red Herring
2. Hasty Generalisation
3. Begging the question
4. Fallacy of division

निम्नलिखित कथन में कौन सा अनाकारिक तर्कदोष है - "अमेरिकी भारतीय विलुप्त हो रहे हैं। वह व्यक्ति अमेरिकी भारतीय है। इस लिए वह व्यक्ति विलुप्त हो रहा है?"

1. रेड हेरिंग
2. अविचारित सामान्यीकरण
3. आत्माश्रय दोष
4. विग्रह दोष

- ☐ 1  
1
- ☐ 2 (Chosen Option)  
2 (Chosen Option)
- ☐ 3  
3
- ☐ 4  
4

Question No. 38 / Question ID 1709

Marks: 2.00

The teaching that provides all students with challenging instructions and uses supports when needed but removes those supports as students become able to handle more on their own is called as :

1. Recessive teaching
2. Active teaching
3. Adaptive teaching
4. Problem-oriented teaching

ऐसे शिक्षण को क्या कहा जाता है जिसमें सभी छात्रों को चुनौतीपूर्ण अनुदेश दिए जाते हैं और आवश्यकतानुसार सहायता प्रदान की जाती है, परंतु जब छात्र स्वयं इन सभी को संभालने में सक्षम हो जाते हैं, तब सहायता हटा ली जाती है।

1. पश्चगामी शिक्षण
2. सक्रिय शिक्षण
3. अनुकूलनात्मक शिक्षण
4. समस्यापरक शिक्षण

- ☐ 1  
1
- ☐ 2  
2
- ☐ 3 (Chosen Option)  
3 (Chosen Option)
- ☐ 4  
4

Question No. 39 / Question ID 1741

Marks: 2.00

The union government's mandate for Humayun Kabir committee was to explore the possibility of

1. Privatisation of public universities
2. Setting up of new university
3. Establishing correspondence courses
4. Funding private universities

हमारायुँ कबीर समिति का अधिवेशन किसकी संभावना तलाशने के लिए था?

1. सार्वजनिक विश्वविद्यालयों का निजीकरण
2. नए विश्वविद्यालय की स्थापना
3. पत्राचार पाठ्यक्रमों की स्थापना
4. निजी विश्वविद्यालयों का निधिपोषण

- ☐ 1  
1
- ☐ 2  
2
- ☐ 3 (Chosen Option)  
3 (Chosen Option)
- ☐ 4  
4

Question No. 40 / Question ID 1740

Marks: 2.00



1. Paris Agreement
2. Montreal Protocol
3. Convention on Biodiversity
4. Earth Summit

जलवायु परिवर्तन संबंधी संयुक्त राष्ट्र फ्रेमवर्क कन्वेंशन निम्नलिखित में से किस का परिणाम था।

1. पेरिस समझौता
2. मांट्रियल प्रोटोकाल
3. जैव विविधता कन्वेंशन
4. पृथ्वी शिखर सम्मेलन (अर्थ सम्मिट)

- ☐ 1  
1
- ☐ 2  
2
- ☐ 3  
3
- ☐ 4 (Chosen Option)  
4 (Chosen Option)

Question No. 41 / Question ID 1717

Marks: 2.00

When people metacommunicate, they are sending messages about जब लोग अधिसम्प्रेषण करते हैं, वे \_\_\_\_\_ बारे में संदेश भेज रहे हैं।

1. Senders
2. receivers
3. Channels
4. Messages

1. प्रेषक
2. प्राप्तकर्ता
3. माध्यम
4. संदेश

- ☐ 1 (Chosen Option)  
1 (Chosen Option)
- ☐ 2  
2
- ☐ 3  
3
- ☐ 4  
4

Question No. 42 / Question ID 1736

Marks: 2.00

Given below are two statements.

**Statement I:** Due to climate change, Arctic sea ice is significantly thinner now than about a century ago

**Statement II:** Due to climate change, tropical regions have warmed much faster than rest of the world.

In the light of the above statements, choose the most appropriate answer from the options given below.

1. Both Statement I and Statement II are correct
2. Both Statement I and Statement II are incorrect
3. Statement I is correct but Statement II is incorrect
4. Statement I is incorrect but Statement II is correct

नीचे दो कथन दिए गए हैं:

**कथन I :** जलवायु परिवर्तन के कारण उत्तर ध्रुवीय समुद्री हिम लगभग एक शताब्दी पूर्व की तुलना में अब अत्यधिक महीन हो गई है।

**कथन II :** जलवायु परिवर्तन के कारण शेष विश्व की अपेक्षा उष्णकटिबंधीय क्षेत्र अधिक तीव्र गति से गरम हुए हैं।

उपरोक्त कथन के आलोक में, नीचे दिए गए विकल्पों में से सबसे उपयुक्त उत्तर का चयन कीजिए।

1. कथन I और II दोनों सही हैं
2. कथन I और II दोनों गलत हैं
3. कथन I सही है, लेकिन कथन II गलत है
4. कथन I गलत है, लेकिन कथन II सही है

☐ 1 (Chosen Option)

1 (Chosen Option)

☐ 2

2

☐ 3

3

☐ 4

4

Identify the correct order of the terms A-E to complete the paragraph about MAC addresses and IP addresses given below.

A MAC address is a media access \_\_\_\_\_ address. A network device has a \_\_\_\_\_ MAC address that can help \_\_\_\_\_ the device in the network. An IP address is an Internet \_\_\_\_\_ address. An IP address can be static or \_\_\_\_\_.

- A. Protocol
- B. Control
- C. Dynamic
- D. Identify
- E. unique

Choose the correct answer from the options given below:

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

एमएसी एड्रेस व आईपी एड्रेस के संबंध में निम्न गद्यांश को पूरा करने के लिए A - E पदों के सही क्रम की पहचान कीजिए।

एमएसी एड्रेस एक मीडिया अभिगम \_\_\_\_\_ एड्रेस है। नेटवर्क युक्ति का एक \_\_\_\_\_ एमएसी एड्रेस होता है जो नेटवर्क में युक्ति की \_\_\_\_\_ में सहायता कर सकता है। आईपी एड्रेस एक इंटरनेट \_\_\_\_\_ एड्रेस है। आईसी एड्रेस स्थिर अथवा \_\_\_\_\_ हो सकता है।

- A. नयाचार (प्रोटोकॉल)
- B. नियंत्रण
- C. गतिक
- D. पहचान
- E. विशिष्ट

नीचे दिए गए विकल्पों में से सही उत्तर का चयन कीजिए।

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

- ☐ 1
- 1
- ☐ 2
- 2
- ☐ 3
- 3
- ☐ 4 (Chosen Option)
- 4 (Chosen Option)

Question No. 44 / Question ID 1718

Marks: 2.00

Media interactivity is experienced at different levels in different \_\_\_\_\_ relations.

- 1. Political
- 2. Economic
- 3. Techno-social
- 4. Techno-ethical

विभिन्न \_\_\_\_\_ संबंधों में विभिन्न स्तरों पर मीडिया अंतःक्रियात्मकता अनुभूत होती है।

- 1. राजनीतिक
  - 2. आर्थिक
  - 3. तकनीकी - सामाजिक
  - 4. तकनीकी - नैतिक
- ☐ 1
  - 1
  - ☐ 2
  - 2
  - ☐ 3 (Chosen Option)
  - 3 (Chosen Option)



Question No. 45 / Question ID 1742

Marks: 2.00

The Education Despatch of 1854 suggested that the medium of instruction in Indian Universities should be

1. Persian
2. Sanskrit
3. Hindi
4. English

1854 के ऐजुकेशन डिसपैच में सुझाव दिया गया था कि भारतीय विश्वविद्यालयों में अनुदेशन का माध्यम यह भाषा होनी चाहिये।

1. फारसी
2. संस्कृत
3. हिन्दी
4. अंग्रेजी

- ☐ 1  
1
- ☐ 2  
2
- ☐ 3  
3
- ☐ 4 (Chosen Option)  
4 (Chosen Option)

Question No. 46 / Question ID 1746

Marks: 2.00

Read the passage and answer the question that follow:

The transport department is planning to start a road safety campaign that will involve local resident welfare associations, market stakeholders, school children and society representatives. As part of the campaign, the district magistrates will form plans to address the increasing number of accidents in consensus with the locals.

The decision was taken after it was found during a government study that road sections passing through pedestrian heavy areas having schools, metro stations and commercial sites were more prone to accidents.

A senior official said that funds worth Crores, which were meant for ensuring road safety were not being being utilised. "The focus of the campaign will be to identify and rectify black spots, revisit speed limits, form road safety clubs, install AI cameras at strategic locations, encourage helmet use, check speed in high risk locations and regulate overloaded commercial vehicles, the official explained .

The number of deaths due to road accidents in Delhi totalled 1,239 in 2021 and an increase from 1,196 fatalities in the previous year, according to Delhi Crash Report 2021, which was prepared by the city's traffic police. Pedestrian deaths comprised more than 40% of the total fatalities.

The Government study found that areas that were more accident prone were

1. Main roads
2. Peripheral roads
3. Highways
4. Pedestrian-heavy areas

निम्नलिखित गद्यांश को ध्यानपूर्वक पढ़िए और उसके नीचे दिए गए प्रश्नों के उत्तर दीजिए।

परिवहन विभाग एक सड़क सुरक्षा अभियान शुरू करने की योजना बना रहा है जिसमें स्थानीय निवासी कल्याण संघ, बाजार हितधारक, स्कूली बच्चे और समाज के प्रतिनिधि शामिल होंगे। इस अभियान के एक भाग के रूप में जिलाधिकारी दुर्घटनाओं की बढ़ती संख्या को रोकने के लिए स्थानीय लोगों की सर्वसम्मति से योजनाएँ बनाएंगे।

यह निर्णय एक सरकारी अध्ययन के दौरान यह पाए जाने के बाद लिया गया था कि पदयात्रियों की अधिक संख्या वाले क्षेत्रों जैसे कि स्कूलों, मेट्रो स्टेशनों और वाणिज्यिक स्थलों से गुजरने वाले सड़क खंडों पर दुर्घटनाओं की अधिक संभावना थी।

एक वरिष्ठ अधिकारी ने बताया कि सड़क सुरक्षा सुनिश्चित करने के लिए आवंटित करोड़ों रुपये की निधियों का उपयोग नहीं किया जा रहा है। अधिकारी ने बताया कि "दुर्घटनाओं की अधिक संभावना वाले स्थानों (ब्लैक स्पॉट) की पहचान करना और वहाँ दुर्घटनाएँ रोकने के उपाय करना, गति सीमाओं की समीक्षा करना, सड़क सुरक्षा क्लबों का गठन करना, महत्वपूर्ण स्थानों पर एआई कैमरा स्थापित करना, हेलमेट के उपयोग को प्रोत्साहित करना, अधिक जोखिम वाले स्थानों पर गति कम करना और, क्षमता से अधिक लदे वाणिज्यिक वाहनों को विनियमित करने पर ध्यान केन्द्रित किया जाएगा"।

शहर की यातायात पुलिस द्वारा तैयार की गई दिल्ली क्रैश रिपोर्ट 2021 के अनुसार वर्ष 2021 में दिल्ली में सड़क दुर्घटनाओं के कारण कुल 1239 लोगों की मौत हुई जो पिछले वर्ष हुई 1196 मौतों से अधिक है। कुल मौतों में से 40% से अधिक मौतें पदयात्रियों की हुई।

सरकारी अध्ययन के अनुसार निम्नलिखित में से कौन से क्षेत्र दुर्घटना की अधिक संभावना वाले क्षेत्र थे?

1. मुख्य सड़कें
  2. परिधीय सड़कें
  3. राजमार्ग
  4. पदयात्रियों की अधिक संख्या वाले क्षेत्र
- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4 (Chosen Option)
- 4 (Chosen Option)



Read the passage and answer the question that follow:

The transport department is planning to start a road safety campaign that will involve local resident welfare associations, market stakeholders, school children and society representatives. As part of the campaign, the district magistrates will form plans to address the increasing number of accidents in consensus with the locals.

The decision was taken after it was found during a government study that road sections passing through pedestrian heavy areas having schools, metro stations and commercial sites were more prone to accidents.

A senior official said that funds worth Crores, which were meant for ensuring road safety were not being being utilised. "The focus of the campaign will be to identify and rectify black spots, revisit speed limits, form road safety clubs, install AI cameras at strategic locations, encourage helmet use, check speed in high risk locations and regulate overloaded commercial vehicles, the official explained .

The number of deaths due to road accidents in Delhi totalled 1,239 in 2021 and an increase from 1,196 fatalities in the previous year, according to Delhi Crash Report 2021, which was prepared by the city's traffic police. Pedestrian deaths comprised more than 40% of the total fatalities.

"Revisit speed limits" means

1. Speed limits will be revised.
2. Speed limit will be re-assessed.
3. Speed limits will be reduced.
4. Speed limits will be increased.

निम्नलिखित गद्यांश को ध्यानपूर्वक पढ़िए और उसके नीचे दिए गए प्रश्नों के उत्तर दीजिए।

परिवहन विभाग एक सड़क सुरक्षा अभियान शुरू करने की योजना बना रहा है जिसमें स्थानीय निवासी कल्याण संघ, बाजार हितधारक, स्कूली बच्चे और समाज के प्रतिनिधि शामिल होंगे। इस अभियान के एक भाग के रूप में जिलाधिकारी दुर्घटनाओं की बढ़ती संख्या को रोकने के लिए स्थानीय लोगों की सर्वसम्मति से योजनाएँ बनाएंगे।

यह निर्णय एक सरकारी अध्ययन के दौरान यह पाए जाने के बाद लिया गया था कि पदयात्रियों की अधिक संख्या वाले क्षेत्रों जैसे कि स्कूलों, मेट्रो स्टेशनों और वाणिज्यिक स्थलों से गुजरने वाले सड़क खंडों पर दुर्घटनाओं की अधिक संभावना थी।

एक वरिष्ठ अधिकारी ने बताया कि सड़क सुरक्षा सुनिश्चित करने के लिए आवंटित करोड़ों रुपये की निधियों का उपयोग नहीं किया जा रहा है। अधिकारी ने बताया कि "दुर्घटनाओं की अधिक संभावना वाले स्थानों (ब्लैक स्पॉट) की पहचान करना और वहाँ दुर्घटनाएँ रोकने के उपाय करना, गति सीमाओं की समीक्षा करना, सड़क सुरक्षा क्लबों का गठन करना, महत्वपूर्ण स्थानों पर एआई कैमरा स्थापित करना, हेलमेट के उपयोग को प्रोत्साहित करना, अधिक जोखिम वाले स्थानों पर गति कम करना और, क्षमता से अधिक लदे वाणिज्यिक वाहनों को विनियमित करने पर ध्यान केन्द्रित किया जाएगा"।

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"गति सीमाओं की समीक्षा करना" का अर्थ है-

1. गति सीमाओं में संशोधन किया जाएगा।
2. गति सीमाओं का पुनः आकलन किया जाएगा।
3. गति सीमाओं को कम किया जाएगा।
4. गति सीमाओं को बढ़ाया जाएगा।

- ☐ 1  
1
- ☐ 2  
2
- ☒ 3 (Chosen Option)  
3 (Chosen Option)
- ☐ 4  
4



Read the passage and answer the question that follow:

The transport department is planning to start a road safety campaign that will involve local resident welfare associations, market stakeholders, school children and society representatives. As part of the campaign, the district magistrates will form plans to address the increasing number of accidents in consensus with the locals.

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Fill in the blank with the appropriate option:

The number of deaths due to road accidents \_\_\_\_\_ from 2020 to 2021.

1. Declined
2. Remained the same
3. Increased
4. Decreased

निम्नलिखित गद्यांश को ध्यानपूर्वक पढ़िए और उसके नीचे दिए गए प्रश्नों के उत्तर दीजिए।

परिवहन विभाग एक सड़क सुरक्षा अभियान शुरू करने की योजना बना रहा है जिसमें स्थानीय निवासी कल्याण संघ, बाजार हितधारक, स्कूली बच्चे और समाज के प्रतिनिधि शामिल होंगे। इस अभियान के एक भाग के रूप में जिलाधिकारी दुर्घटनाओं की बढ़ती संख्या को रोकने के लिए स्थानीय लोगों की सर्वसम्मति से योजनाएँ बनाएंगे।

यह निर्णय एक सरकारी अध्ययन के दौरान यह पाए जाने के बाद लिया गया था कि पदयात्रियों की अधिक संख्या वाले क्षेत्रों जैसे कि स्कूलों, मेट्रो स्टेशनों और वाणिज्यिक स्थलों से गुजरने वाले सड़क खंडों पर दुर्घटनाओं की अधिक संभावना थी।

एक वरिष्ठ अधिकारी ने बताया कि सड़क सुरक्षा सुनिश्चित करने के लिए आवंटित करोड़ों रुपये की निधियों का उपयोग नहीं किया जा रहा है। अधिकारी ने बताया कि "दुर्घटनाओं की अधिक संभावना वाले स्थानों (ब्लैक स्पॉट) की पहचान करना और वहाँ दुर्घटनाएँ रोकने के उपाय करना, गति सीमाओं की समीक्षा करना, सड़क सुरक्षा क्लबों का गठन करना, महत्वपूर्ण स्थानों पर एआई कैमरा स्थापित करना, हेलमेट के उपयोग को प्रोत्साहित करना, अधिक जोखिम वाले स्थानों पर गति कम करना और, क्षमता से अधिक लदे वाणिज्यिक वाहनों को विनियमित करने पर ध्यान केन्द्रित किया जाएगा"।

शहर की यातायात पुलिस द्वारा तैयार की गई दिल्ली क्रेश रिपोर्ट 2021 के अनुसार वर्ष 2021 में दिल्ली में सड़क दुर्घटनाओं के कारण कुल 1239 लोगों की मौत हुई जो पिछले वर्ष हुई 1196 मौतों से अधिक है। कुल मौतों में से 40% से अधिक मौतें पदयात्रियों की हुई।

रिक्त स्थान पर उपयुक्त विकल्प भरें: वर्ष 2020 से 2021 तक सड़क दुर्घटनाओं के कारण हुई मौतों की संख्या \_\_\_\_\_.

1. में गिरावट आई ।
  2. एक समान रही ।
  3. में वृद्धि हुई ।
  4. में कमी आई ।
- ☐ 1
- ☐ 2
- ☐ 3 (Chosen Option)
- ☐ 4



Read the passage and answer the question that follow:

The transport department is planning to start a road safety campaign that will involve local resident welfare associations, market stakeholders, school children and society representatives. As part of the campaign, the district magistrates will form plans to address the increasing number of accidents in consensus with the locals.

The decision was taken after it was found during a government study that road sections passing through pedestrian heavy areas having schools, metro stations and commercial sites were more prone to accidents.

A senior official said that funds worth Crores, which were meant for ensuring road safety were not being being utilised. "The focus of the campaign will be to identify and rectify black spots, revisit speed limits, form road safety clubs, install AI cameras at strategic locations, encourage helmet use, check speed in high risk locations and regulate overloaded commercial vehicles, the official explained .

The number of deaths due to road accidents in Delhi totalled 1,239 in 2021 and an increase from 1,196 fatalities in the previous year, according to Delhi Crash Report 2021, which was prepared by the city's traffic police. Pedestrian deaths comprised more than 40% of the total fatalities.

Given below are two statements:

**Statement I:** The focus of the passage is on making Delhi roads safer.

**Statement II:** Funds worth crores meant for ensuring road safety have been properly utilized.

In the light of the above statements, choose the most appropriate answer from the options given below.

1. Both Statement I and Statement II are correct
2. Both Statement I and Statement II are incorrect
3. Statement I is correct but Statement II is incorrect
4. Statement I is incorrect but Statement II is correct

निम्नलिखित गद्यांश को ध्यानपूर्वक पढ़िए और उसके नीचे दिए गए प्रश्नों के उत्तर दीजिए।

परिवहन विभाग एक सड़क सुरक्षा अभियान शुरू करने की योजना बना रहा है जिसमें स्थानीय निवासी कल्याण संघ, बाजार हितधारक, स्कूली बच्चे और समाज के प्रतिनिधि शामिल होंगे। इस अभियान के एक भाग के रूप में जिलाधिकारी दुर्घटनाओं की बढ़ती संख्या को रोकने के लिए स्थानीय लोगों की सर्वसम्मति से योजनाएँ बनाएंगे।

यह निर्णय एक सरकारी अध्ययन के दौरान यह पाए जाने के बाद लिया गया था कि पदयात्रियों की अधिक संख्या वाले क्षेत्रों जैसे कि स्कूलों, मेट्रो स्टेशनों और वाणिज्यिक स्थलों से गुजरने वाले सड़क खंडों पर दुर्घटनाओं की अधिक संभावना थी।

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नीचे दो कथन दिए गए हैं:

**कथन I :** गद्यांश का केन्द्र बिंदु दिल्ली की सड़कों को सुरक्षित बनाना है।

**कथन II :** सड़क सुरक्षा सुनिश्चित करने के लिए आवंटित करोड़ों रूपयों की निधियों का समुचित उपयोग किया गया है।

उपरोक्त कथन के आलोक में, नीचे दिए गए विकल्पों में से सबसे उपयुक्त उत्तर का चयन कीजिए:

1. कथन I और II दोनों सही हैं
2. कथन I और II दोनों गलत हैं
3. कथन I सही है, लेकिन कथन II गलत है
4. कथन I गलत है, लेकिन कथन II सही है

☐ 1 (Chosen Option)  
1 (Chosen Option)

☐ 2  
2

☐ 3  
3



Read the passage and answer the question that follow:

The transport department is planning to start a road safety campaign that will involve local resident welfare associations, market stakeholders, school children and society representatives. As part of the campaign, the district magistrates will form plans to address the increasing number of accidents in consensus with the locals.

The decision was taken after it was found during a government study that road sections passing through pedestrian heavy areas having schools, metro stations and commercial sites were more prone to accidents.

A senior official said that funds worth Crores, which were meant for ensuring road safety were not being being utilised. "The focus of the campaign will be to identify and rectify black spots, revisit speed limits, form road safety clubs, install AI cameras at strategic locations, encourage helmet use, check speed in high risk locations and regulate overloaded commercial vehicles, the official explained .

The number of deaths due to road accidents in Delhi totalled 1,239 in 2021 and an increase from 1,196 fatalities in the previous year, according to Delhi Crash Report 2021, which was prepared by the city's traffic police. Pedestrian deaths comprised more than 40% of the total fatalities.

" Black spots" are areas

1. that have been blackened.
2. that have no light.
3. where a lot of accidents happen.
4. that are busy.

निम्नलिखित गद्यांश को ध्यानपूर्वक पढ़िए और उसके नीचे दिए गए प्रश्नों के उत्तर दीजिए।

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'ब्लैक स्पॉट' ऐसे क्षेत्र है-

1. जिन्हें काले रंग से रंग दिया गया है।
2. जहाँ प्रकाश नहीं है।
3. जहाँ अधिक दुर्घटनाएँ होती है।
4. जो भीड़-भाड़ वाले हैं।

- ☐ 1
- ☐ 2
- ☒ 3 (Chosen Option)
- ☐ 4

The total cost of retrieving records in sorted order using an unclustered B+ tree is

(P- Average number of records per data page

N- Data pages

F- Ratio of the size of a data entry to the size of a data record)

1.  $(F*N) + P$
2.  $(F+P) * N$
3.  $F*N*P$
4.  $F+P/N$

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3.  $F*N*P$
4.  $F+P/N$

- ☐ 1  
1
- ☐ 2  
2
- ☐ 3  
3
- ☐ 4 (Chosen Option)  
4 (Chosen Option)



Suppose a circular queue of capacity (n-1) elements is implemented with an array of n elements. Assume that the insertion and deletion operations are carried out using REAR and FRONT as array index variable respectively. Initially, REAR=FRONT=0. The conditions to detect queue empty and queue full are

1. EMPTY: REAR == FRONT

FULL : (REAR+1) mod n == FRONT

2. EMPTY: (FRONT +1) mod n == REAR

FULL: (REAR +1) mod n == FRONT

3. EMPTY (REAR +1) mod n == FRONT

FULL: REAR== FRONT

4. EMPTY: REAR== FRONT

FULL: (FRONT+1) mod n == REAR

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FULL: REAR== FRONT

4. EMPTY: REAR== FRONT

FULL: (FRONT+1) mod n == REAR

☐ 1 (Chosen Option)

1 (Chosen Option)

☐ 2

2

☐ 3

3

☐ 4

4

Given below are two statements: one is labelled as Assertion A and the other is labelled as Reason R.

**Assertion A:** Dendral is an expert system

**Reason R:** The rationality of an agent is not related to its reaction to the environment.

In the light of the above statements, choose the **correct** answer from the options given below.

1. Both A and R are true and R is the correct explanation of A
2. Both A and R are true but R is NOT the correct explanation of A
3. A is true but R is false
4. A is false but R is true

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3. A is true but R is false
4. A is false but R is true

- ☐ 1  
1
- ☒ 2 (Chosen Option)  
2 (Chosen Option)
- ☐ 3  
3
- ☐ 4  
4

Question No. 4 / Question ID 87070

Marks: 2.00

The compiler for high level language that runs on one machine and produces code for other machine is called-

1. Cross compiler
2. Multipass compiler
3. Optimizing Compiler
4. One pass Compiler

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4. One pass Compiler

- ☐ 1  
1
- ☒ 2 (Chosen Option)  
2 (Chosen Option)
- ☐ 3  
3
- ☐ 4  
4

Question No. 5 / Question ID 87064

Marks: 2.00

Match List I with List II

LIST I		LIST II	
A.	The running time of straight forward recursive method to compute nth Fibonacci number Fn	I.	$O(n^2)$
B.	The running time to compute Fn using memoization	II.	$O(\lg n)$
C.	The running time to compute Fibonacci number Fn using only integer addition and multiplication	III.	$O(n)$
D.	The running time to determine an optimal bitonic tour	IV.	$\Theta(\phi^n)$

Choose the correct answer from the options given below:

1. A-I    B-III    C-IV    D-II
2. A-IV    B-III    C-II    D-I
3. A-I    B-II    C-IV    D-III
4. A-IV    B-II    C-III    D-I

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D.	The running time to determine an optimal bitonic tour	IV.	$\Theta(\phi^n)$

Choose the correct answer from the options given below:

1. A-I    B-III    C-IV    D-II
2. A-IV    B-III    C-II    D-I
3. A-I    B-II    C-IV    D-III
4. A-IV    B-II    C-III    D-I

- ☐ 1  
 1  
☐ 2  
 2  
☐ 3 (Chosen Option)  
 3 (Chosen Option)  
☐ 4  
 4

Question No. 6 / Question ID 87085

Marks: 2.00

Which of the following is not a solution representation in a genetic algorithm?

1. Binary valued
2. Real valued
3. Permutation
4. Combinations

Which of the following is not a solution representation in a genetic algorithm?

1. Binary valued
  2. Real valued
  3. Permutation
  4. Combinations
- ☐ 1  
 1  
☐ 2 (Chosen Option)  
 2 (Chosen Option)  
☐ 3  
 3  
☐ 4  
 4

Question No. 7 / Question ID 87062

Marks: 2.00

Consider the following statements about heap sort algorithm:

- A. The MAX-HEAPIFY procedure which runs in  $O(\lg(n))$  time, is the key to maintaining the max heap property
- B. The BUILD-MAX-HEAP procedure, which runs in  $O(\lg(n))$  time, produces max-heap from an unordered input array
- C. The MAX-HEAP-INSERT, which runs in  $O(\lg n)$  time, implements the insertion operation
- D. The HEAP-INCREASE-KEY procedure runs in  $O(n \lg n)$  time, to set the key of new node of its correct value

Choose the correct answer from the options given below:

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

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- A. The MAX-HEAPIFY procedure which runs in  $O(\lg(n))$  time, is the key to maintaining the max heap property
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Choose the correct answer from the options given below:

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

- ☐ 1
- ☐ 2
- ☒ 3 (Chosen Option)
- ☐ 4

Question No. 8 / Question ID 87048

Marks: 2.00

\_\_\_\_\_ is intended to show that a system both conforms to its specifications and meets the expectations of the system customer.

- 1. Software specification
- 2. Software design
- 3. Software evaluation
- 4. software validation

\_\_\_\_\_ is intended to show that a system both conforms to its specifications and meets the expectations of the system customer.

- 1. Software specification
- 2. Software design
- 3. Software evaluation
- 4. software validation

- ☐ 1
- ☐ 2
- ☒ 3 (Chosen Option)
- ☐ 4

Question No. 9 / Question ID 87042

Marks: 2.00



Given below are two statements: one is labelled as Assertion A and the other is labelled as Reason R.

**Assertion A:** A process involves a library function to create a thread.

**Reason R:** The threads make system calls to convey their resource and I/O requirement to the Kernel.

In the light of the above statements, choose the correct answer from the options given below.

1. Both A and R are true and R is the correct explanation of A
2. Both A and R are true but R is NOT the correct explanation of A
3. A is true but R is false
4. A is false but R is true

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1. Both A and R are true and R is the correct explanation of A
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3. A is true but R is false
4. A is false but R is true

☐ 1 (Chosen Option)

1 (Chosen Option)

☐ 2

2

☐ 3

3

☐ 4

4

Question No. 10 / Question ID 87088

Marks: 2.00

Which of the following is not a mutation operator in a genetic algorithm?

- A. Random resetting
- B. Scramble
- C. Inversion
- D. Difference

Choose the correct answer from the options given below:

1. A and B only
2. B and D only
3. C and D only
4. D only

Which of the following is not a mutation operator in a genetic algorithm?

- A. Random resetting
- B. Scramble
- C. Inversion
- D. Difference

Choose the correct answer from the options given below:

1. A and B only
2. B and D only
3. C and D only
4. D only

☐ 1

1

☐ 2

2

☐ 3

3

- ☐ 4 (Chosen Option)  
4 (Chosen Option)

**Question No. 11 / Question ID 87079**

Marks: 2.00

Match List I with List II

LIST I		LIST II	
A.	Physical layer	I.	Transforming the raw bits in the form of frame for transmission
B.	Data Link Layer	II.	Control and monitoring of subnet
C.	Network layer	III.	Transmission of raw bits over communication channel
D.	Transport layer	IV.	Datagrams transmission data through connection oriented or connectionless using datagram

Choose the correct answer from the options given below:

1. A-III    B-II    C-I    D-IV
2. A-II    B-III    C-I    D-IV
3. A-III    B-I    C-II    D-IV
4. A-II    B-IV    C-I    D-III

Match List I with List II

LIST I		LIST II	
A.	Physical layer	I.	Transforming the raw bits in the form of frame for transmission
B.	Data Link Layer	II.	Control and monitoring of subnet
C.	Network layer	III.	Transmission of raw bits over communication channel
D.	Transport layer	IV.	Datagrams transmission data through connection oriented or connectionless using datagram

Choose the correct answer from the options given below:

1. A-III    B-II    C-I    D-IV
2. A-II    B-III    C-I    D-IV
3. A-III    B-I    C-II    D-IV
4. A-II    B-IV    C-I    D-III

- ☐ 1 (Chosen Option)  
1 (Chosen Option)
- ☐ 2  
2
- ☐ 3  
3
- ☐ 4  
4

**Question No. 12 / Question ID 87022**

Marks: 2.00

The clipping process in computer graphics is used for The clipping process in computer graphics is used for

1. Adding graphics
2. Copying
3. Zooming
4. Removing objects and lines

- ☐ 1 (Chosen Option)  
1 (Chosen Option)
- ☐ 2  
2
- ☐ 3  
3
- ☐ 4  
4

**Question No. 13 / Question ID 87068**

Marks: 2.00

The maximum yield length of the following CNF CFG is The maximum yield length of the following CNF CFG is

$S \rightarrow AB$   
 $A \rightarrow CD$   
 $B \rightarrow e$   
 $C \rightarrow a$   
 $D \rightarrow b$

$S \rightarrow AB$   
 $A \rightarrow CD$   
 $B \rightarrow e$   
 $C \rightarrow a$   
 $D \rightarrow b$

1. 8
  2. 7
  3. 4
  4. 5
- ☐ 1  
☐ 1  
☐ 2  
☐ 2  
☐ 3 (Chosen Option)  
☐ 3 (Chosen Option)  
☐ 4  
☐ 4

1. 8
2. 7
3. 4
4. 5

Question No. 14 / Question ID 87056

Marks: 2.00

A three dimensional array in C++ is declared as  $\text{int } A[a][b][c]$ . Consider that array elements are stored in row major order and indexing begin from 0. Here the address of an item at the location  $A[r][s][t]$  computed in terms of word length  $w$  of an integer is

1.  $\&A[0][0][0] + w(b*c*s + c*r + t)$
2.  $\&A[0][0][0] + w(b*c*r + c*s + t)$
3.  $\&A[0][0][0] + w(a*b*r + c*s + t)$
4.  $\&A[0][0][0] + w(a*b*s + c*r + t)$

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2.  $\&A[0][0][0] + w(b*c*r + c*s + t)$
3.  $\&A[0][0][0] + w(a*b*r + c*s + t)$
4.  $\&A[0][0][0] + w(a*b*s + c*r + t)$

- ☐ 1  
☐ 1  
☐ 2  
☐ 2  
☐ 3 (Chosen Option)  
☐ 3 (Chosen Option)  
☐ 4  
☐ 4

Question No. 15 / Question ID 87006

Marks: 2.00

Let  $G = \frac{R}{\{0\}}$  and  $H = \{-1, 1\}$  be groups under the multiplication. Then, the map  $\phi: G \rightarrow H$  defined by  $\phi(x) = \frac{x}{|x|}$  is

1. Not a homomorphism
2. A one-one homomorphism, which is not onto
3. An onto homomorphism, which is not one to one
4. An homomorphism

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1. Not a homomorphism
2. A one-one homomorphism, which is not onto
3. An onto homomorphism, which is not one to one
4. An homomorphism

- ☐ 1  
1
- ☐ 2  
2
- ☐ 3 (Chosen Option)  
3 (Chosen Option)
- ☐ 4  
4

**Question No. 16 / Question ID 87009**

Marks: 2.00

Consider the following statements.

- A. The identity is unique in any monoid.
- B. A monoid is a group if there exists inverse of each element of monoid.
- C. Semi group has closure, associative and identity properties.
- D. Quasi group has closure property.

Choose the correct answer from the options given below :

1. A, B and D only
2. B, C and D only
3. A, B and C only
4. A, C and D only

Consider the following statements.

- A. The identity is unique in any monoid.
- B. A monoid is a group if there exists inverse of each element of monoid.
- C. Semi group has closure, associative and identity properties.
- D. Quasi group has closure property.

Choose the correct answer from the options given below :

1. A, B and D only
2. B, C and D only
3. A, B and C only
4. A, C and D only

- ☐ 1  
1
- ☐ 2  
2
- ☐ 3  
3
- ☐ 4 (Chosen Option)  
4 (Chosen Option)

**Question No. 17 / Question ID 87076**

Marks: 2.00



In the standard Ethernet with transmission rate of 10 Mbps, assume that the length of the medium is 2500m and size of a frame is 512 bytes. The propagation speed of a signal in a cable is normally  $2 \times 10^8$  m/s. The transmission delay and propagation delay are

1. 25.25  $\mu$ s and 51.2  $\mu$ s
2. 51.2  $\mu$ s and 12.5  $\mu$ s
3. 10.24  $\mu$ s and 50.12  $\mu$ s
4. 12.5  $\mu$ s and 51.2  $\mu$ s

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3. 10.24  $\mu$ s and 50.12  $\mu$ s
4. 12.5  $\mu$ s and 51.2  $\mu$ s

- ☐ 1  
1
- ☐ 2  
2
- ☐ 3 (Chosen Option)  
3 (Chosen Option)
- ☐ 4  
4

**Question No. 18 / Question ID 87012**

Marks: 2.00

What is the (4+4) fit binary fixed point equivalent of  $-(3.72)_{10}$ ? What is the (4+4) fit binary fixed point equivalent of  $-(3.72)_{10}$ ?

- |              |              |
|--------------|--------------|
| 1. 0011.1100 | 1. 0011.1100 |
| 2. 0011.1010 | 2. 0011.1010 |
| 3. 1100.0100 | 3. 1100.0100 |
| 4. 0011.1011 | 4. 0011.1011 |

- ☐ 1  
1
- ☐ 2  
2
- ☐ 3 (Chosen Option)  
3 (Chosen Option)
- ☐ 4  
4

**Question No. 19 / Question ID 87045**

Marks: 2.00

Match List I with List II

LIST I		LIST II	
A.	Critical region	I.	Hoare's monitor
B.	Wait/signal	II.	Mutual exclusion
C.	Working set	III.	Principle of locality
D.	Deadlock	IV.	Circular wait

Match List I with List II

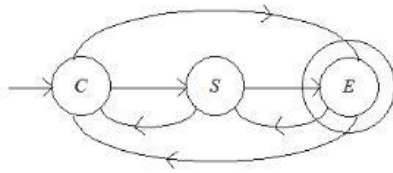
LIST I		LIST II	
A.	Critical region	I.	Hoare's monitor
B.	Wait/signal	II.	Mutual exclusion
C.	Working set	III.	Principle of locality
D.	Deadlock	IV.	Circular wait

Choose the correct answer from the options given below: Choose the correct answer from the options given below:

- |         |       |       |      |
|---------|-------|-------|------|
| 1. A-IV | B-I   | C-III | D-II |
| 2. A-II | B-I   | C-III | D-IV |
| 3. A-I  | B-II  | C-III | D-IV |
| 4. A-IV | B-III | C-I   | D-II |

- ☐ 1  
1
- ☐ 2  
2
- ☐ 3 (Chosen Option)  
3 (Chosen Option)

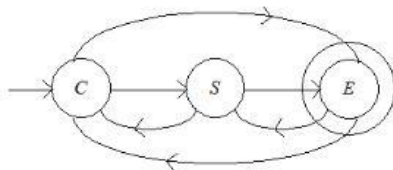
Consider the following finite automata F1 that accepts a language L



Let F2 be a finite automata which is obtained by reversal of F1. Then which of the following is correct?

1.  $L(F1) \neq L(F2)$
2.  $L(F1) = L(F2)$
3.  $L(F1) \leq L(F2)$
4.  $L(F1) \geq L(F2)$

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2.  $L(F1) = L(F2)$
3.  $L(F1) \leq L(F2)$
4.  $L(F1) \geq L(F2)$

☐ 1  
1

☐ 2  
2

☐ 3  
3

☒ 4 (Chosen Option)  
4 (Chosen Option)

Given below are two statements:

Statement I: If  $f$  and  $g$  are two functions and  $f = O(g)$  but  $g \neq o(f)$ , we say that the growth rate of  $g$  is smaller than that of  $f$

Statement II: The class of all decision problems decided by a TM in exponential time, that is  $O(2^k)$ ,  $k$  being a constant.

In the light of the above statements, choose the most appropriate answer from the options given below.

1. Both Statement I and Statement II are correct
2. Both Statement I and Statement II are incorrect
3. Statement I is correct but Statement II is incorrect
4. Statement I is incorrect but Statement II is correct

Given below are two statements:

Statement I: If  $f$  and  $g$  are two functions and  $f = O(g)$  but  $g \neq o(f)$ , we say that the growth rate of  $g$  is smaller than that of  $f$

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In the light of the above statements, choose the most appropriate answer from the options given below.

1. Both Statement I and Statement II are correct
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3. Statement I is correct but Statement II is incorrect
4. Statement I is incorrect but Statement II is correct

- ☐ 1  
1
- ☐ 2  
2
- ☐ 3 (Chosen Option)  
3 (Chosen Option)
- ☐ 4  
4

Question No. 22 / Question ID 87017

Marks: 2.00

What is  $x$  in the following program?

```
#include <stdio.h>
```

```
int main ()
```

```
{typedef (* (* arrfptr [3]) ()) [10];
```

```
arrfptr x ;
```

```
return 0 ;
```

```
}
```

What is  $x$  in the following program?

```
#include <stdio.h>
```

```
int main ()
```

```
{typedef (* (* arrfptr [3]) ()) [10];
```

```
arrfptr x ;
```

```
return 0 ;
```

```
}
```

1.  $x$  is a pointer
2.  $x$  is a array of three pointer
3.  $x$  is an array of three function pointer
4. Error in  $x$  declaration

- ☐ 1  
1
- ☐ 2  
2
- ☐ 3 (Chosen Option)  
3 (Chosen Option)
- ☐ 4  
4

1.  $x$  is a pointer
2.  $x$  is a array of three pointer
3.  $x$  is an array of three function pointer
4. Error in  $x$  declaration

Question No. 23 / Question ID 87084

Marks: 2.00

Consider universe positive integer  $X = \{1 \leq n \leq 8\}$ , proposition  $P = "n \text{ is an even integers}"$ ,  $Q = "(3 \leq n \leq 7) \wedge (n \neq 6)"$ . Then truth set of  $P \leftrightarrow Q$  is

1.  $\{1,4\}$
2.  $\{2,6\}$
3.  $\{3,4,5\}$
4.  $\{1\}$

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1.  $\{1,4\}$
  2.  $\{2,6\}$
  3.  $\{3,4,5\}$
  4.  $\{1\}$
- ☐ 1  
1
- ☐ 2  
2
- ☒ 3 (Chosen Option)  
3 (Chosen Option)
- ☐ 4  
4

Question No. 24 / Question ID 87029

Marks: 2.00

Given below are two statements:

Which of the following concurrency control protocol ensures both conflict serializability and freedom from deadlock?

Statement I: Two phase locking

Statement II: Timestamp ordering

In the light of the above statements, choose the most appropriate answer from the options given below:

1. Both Statement I and Statement II are correct
2. Both Statement I and Statement II are incorrect
3. Statement I is correct but Statement II is incorrect
4. Statement I is incorrect but Statement II is correct

Given below are two statements:

Which of the following concurrency control protocol ensures both conflict serializability and freedom from deadlock?

Statement I: Two phase locking

Statement II: Timestamp ordering

In the light of the above statements, choose the most appropriate answer from the options given below:

1. Both Statement I and Statement II are correct
2. Both Statement I and Statement II are incorrect
3. Statement I is correct but Statement II is incorrect
4. Statement I is incorrect but Statement II is correct

- ☐ 1  
1
- ☐ 2  
2
- ☒ 3 (Chosen Option)  
3 (Chosen Option)
- ☐ 4  
4



Given below are two statements: one is labelled as **Assertion A** and the other is labelled as **Reason R**.

**Assertion A:** I/O protection is ensured by a hardware trap

**Reason R:** I/O interrupt caused by the condition like I/O completion and device malfunction occurring within the I/O devices

In the light of the above statements, choose the **correct** answer from the options given below.

1. Both A and R are true and R is the correct explanation of A
2. Both A and R are true but R is NOT the correct explanation of A
3. A is true but R is false
4. A is false but R is true

Given below are two statements: one is labelled as **Assertion A** and the other is labelled as **Reason R**.

**Assertion A:** I/O protection is ensured by a hardware trap

**Reason R:** I/O interrupt caused by the condition like I/O completion and device malfunction occurring within the I/O devices

In the light of the above statements, choose the **correct** answer from the options given below.

1. Both A and R are true and R is the correct explanation of A
2. Both A and R are true but R is NOT the correct explanation of A
3. A is true but R is false
4. A is false but R is true

- ☐ 1  
1
- ☐ 2  
2
- ☐ 3 (Chosen Option)  
3 (Chosen Option)
- ☐ 4  
4

## Question No. 26 / Question ID 87051

Marks: 2.00

Consider the following statements about the software product line system:

Statement I: At the interaction level, components provide an operator display interface and an interface with the communication system used.

Statement II: At the I/O management level, components handle operator authentication, report generator and query manager.

In the light of the above statements, choose the most appropriate answer from the options given below.

1. Both Statement I and Statement II are correct
2. Both Statement I and Statement II are incorrect
3. Statement I is correct but Statement II is incorrect
4. Statement I is incorrect but Statement II is correct

Consider the following statements about the software product line system:

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In the light of the above statements, choose the most appropriate answer from the options given below.

1. Both Statement I and Statement II are correct
2. Both Statement I and Statement II are incorrect
3. Statement I is correct but Statement II is incorrect
4. Statement I is incorrect but Statement II is correct

- ☐ 1  
1

- ☐ 2
- ☐ 3 (Chosen Option)
- ☐ 4

Question No. 27 / Question ID 87039

Marks: 2.00

Consider a disk system with cylinders. The request to access the cylinders occurs in the following sequence:

4,34,10,7,19,73,2,15,6,20

Assuming that the head is currently at cylinder 50, what is the time taken to satisfy all requests if it takes 1 ms to move from one cylinder to adjacent one and shortest seek time first policy is used?

- 1. 119 ms
- 2. 120 ms
- 3. 142 ms
- 4. 146 ms

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- 1. 119 ms
- 2. 120 ms
- 3. 142 ms
- 4. 146 ms

- ☐ 1
- ☐ 2
- ☐ 3 (Chosen Option)
- ☐ 4

Question No. 28 / Question ID 87065

Marks: 2.00

Match List I with List II

LIST I		LIST II	
A.	Parallel FFT	I.	$O(n^2)$
B.	Iterative FFT	II.	$O(n)$
C.	Evaluation of polynomial at n points by Horner method	III.	$O(\lg n)$
D.	Product of two polynomials that are represented in point value form	IV.	$O(n \lg n)$

Choose the correct answer from the options given below:

1. A-III    B-I    C-II    D-III
2. A-II    B-I    C-III    D-IV
3. A-III    B-IV    C-I    D-II
4. A-II    B-III    C-IV    D-I

Match List I with List II

LIST I		LIST II	
A.	Parallel FFT	I.	$O(n^2)$
B.	Iterative FFT	II.	$O(n)$
C.	Evaluation of polynomial at n points by Horner method	III.	$O(\lg n)$
D.	Product of two polynomials that are represented in point value form	IV.	$O(n \lg n)$

Choose the correct answer from the options given below:

1. A-III    B-I    C-II    D-III
2. A-II    B-I    C-III    D-IV
3. A-III    B-IV    C-I    D-II
4. A-II    B-III    C-IV    D-I

- ☐ 1  
 1  
☐ 2 (Chosen Option)  
 2 (Chosen Option)  
☐ 3  
 3  
☐ 4  
 4



let  $R(A, B, C, D)$  be a relational schema with following function dependencies:

$A \rightarrow B, B \rightarrow C$

$C \rightarrow D$  and  $D \rightarrow B$

The decomposition of  $R$  into

$(A, B) (B, C) (B, D)$

1. gives a lossless join, and is dependency preserving
2. gives lossless join, but is not dependency preserving
3. does not give a lossless join, but is dependency preserving
4. does not give a lossless join and is not dependency preserving

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$A \rightarrow B, B \rightarrow C$

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2. gives lossless join, but is not dependency preserving
3. does not give a lossless join, but is dependency preserving
4. does not give a lossless join and is not dependency preserving

- ☐ 1  
1
- ☐ 2  
2
- ☐ 3 (Chosen Option)  
3 (Chosen Option)
- ☐ 4  
4

Question No. 30 / Question ID 87067

Marks: 2.00

Which of the following statement is correct?

1. Ackermann's function is primitive recursive.
2.  $L = \{a^n b^k c^{n+k} : n \geq 0, k \geq 0\}$  is regular language.
3.  $L = \{a^n b^j : n = j^2\}$  is not context free language
4. For every context sensitive language  $L$  not including  $\lambda$ , there exists some linear bounded automata  $M$  such that  $L \neq L(M)$ .

Which of the following statement is correct?

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3.  $L = \{a^n b^j : n = j^2\}$  is not context free language
4. For every context sensitive language  $L$  not including  $\lambda$ , there exists some linear bounded automata  $M$  such that  $L \neq L(M)$ .

- ☐ 1  
1
- ☐ 2  
2
- ☐ 3 (Chosen Option)  
3 (Chosen Option)
- ☐ 4  
4

Question No. 31 / Question ID 87077

Marks: 2.00

A TCP server application is programmed to listen on port P on host S. A TCP client is connected to the TCP server over the network. Consider that while TCP connection is active the server is crashed and rebooted. Assume that the client does not use TCP keepalive timer. Which of the following behaviour/s is/are possible ?

Statement I: The TCP application server on S can listen on P after reboot.

Statement II: If client sends a packet after the server reboot, it will receive the RST segment.

In the light of the above statements, choose the correct answer from the options given below.

1. Both Statement I and Statement II are true
2. Both Statement I and Statement II are false
3. Statement I is true but Statement II is false
4. Statement I is false but Statement II is true

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In the light of the above statements, choose the correct answer from the options given below.

1. Both Statement I and Statement II are true
2. Both Statement I and Statement II are false
3. Statement I is true but Statement II is false
4. Statement I is false but Statement II is true

- ☐ 1  
1
- ☒ 2 (Chosen Option)  
2 (Chosen Option)
- ☐ 3  
3
- ☐ 4  
4

Consider the following statements

- A. C-Fuzzy means clustering is a supervised method of learning
- B. PCA is used for dimension reduction
- C. Apriori is not a supervised technique
- D. When a machine learning model becomes so specially tuned to its exact input data that it fails to generalize to other similar data it is called underfitting

Choose the correct answer from the options given below:

- 1. A and B
- 2. B and C
- 3. C and D
- 4. D and A

Consider the following statements

- A. C-Fuzzy means clustering is a supervised method of learning
- B. PCA is used for dimension reduction
- C. Apriori is not a supervised technique
- D. When a machine learning model becomes so specially tuned to its exact input data that it fails to generalize to other similar data it is called underfitting

Choose the correct answer from the options given below:

- 1. A and B
- 2. B and C
- 3. C and D
- 4. D and A

- ☐ 1 (Chosen Option)  
1 (Chosen Option)
- ☐ 2  
2
- ☐ 3  
3
- ☐ 4  
4

Question No. 33 / Question ID 87036

Marks: 2.00

At a particular time of computation, the value of a counting semaphore is 7. Then 20 P operations and 'x' V operations were completed on this semaphore. If the final value of semaphore is 5, x will be

- 1. 15
- 2. 22
- 3. 18
- 4. 13

At a particular time of computation, the value of a counting semaphore is 7. Then 20 P operations and 'x' V operations were completed on this semaphore. If the final value of semaphore is 5, x will be

- 1. 15
  - 2. 22
  - 3. 18
  - 4. 13
- ☐ 1  
1
  - ☐ 2  
2
  - ☐ 3 (Chosen Option)  
3 (Chosen Option)
  - ☐ 4  
4

Question No. 34 / Question ID 87087

Marks: 2.00



Given below are two statements:

Statement I: Fuzzifier is a part of a fuzzy system

Statement II: Inference engine is a part of fuzzy system

In the light of the above statements, choose the most appropriate answer from the options given below:

1. Both Statement I and Statement II are correct
2. Both Statement I and Statement II are incorrect
3. Statement I is correct but Statement II is incorrect
4. Statement I is incorrect but Statement II is correct

Given below are two statements:

Statement I: Fuzzifier is a part of a fuzzy system

Statement II: Inference engine is a part of fuzzy system

In the light of the above statements, choose the most appropriate answer from the options given below:

1. Both Statement I and Statement II are correct
2. Both Statement I and Statement II are incorrect
3. Statement I is correct but Statement II is incorrect
4. Statement I is incorrect but Statement II is correct

☐ 1 (Chosen Option)  
1 (Chosen Option)

☐ 2  
2

☐ 3  
3

☐ 4  
4

Question No. 35 / Question ID 87090

Marks: 2.00

Match List I with List II

LIST I		LIST II	
A.	Expert system	I.	Decision tree
B.	Fuzzy system	II.	Scramble
C.	Operator in genetic algorithm	III.	Inference engine
D.	Supervised technique	IV.	Mycin

Match List I with List II

LIST I		LIST II	
A.	Expert system	I.	Decision tree
B.	Fuzzy system	II.	Scramble
C.	Operator in genetic algorithm	III.	Inference engine
D.	Supervised technique	IV.	Mycin

Choose the correct answer from the options given below: Choose the correct answer from the options given below:

1. A-IV B-I C-III D-II
2. A-III B-IV C-II D-I
3. A-IV B-III C-II D-I
4. A-I B-II C-III D-IV

☐ 1  
1

☐ 2  
2

☐ 3 (Chosen Option)  
3 (Chosen Option)

☐ 4  
4

1. A-IV B-I C-III D-II
2. A-III B-IV C-II D-I
3. A-IV B-III C-II D-I
4. A-I B-II C-III D-IV

Question No. 36 / Question ID 87040

Marks: 2.00

Consider the following statements:

S1: LRU page replacement algorithm suffers from the belady's anomaly

S2: Shortest remaining time first scheduling may cause starvations

S3: Stack is shared by all threads in a process

1. S1 S2 and S3 are true
2. S1, S3 false and S2 is true
3. S1, S2 are false and S3 is true
4. S1, S2 and S3 are false

Consider the following statements:

S1: LRU page replacement algorithm suffers from the belady's anomaly

S2: Shortest remaining time first scheduling may cause starvations

S3: Stack is shared by all threads in a process

1. S1 S2 and S3 are true
2. S1, S3 false and S2 is true
3. S1, S2 are false and S3 is true
4. S1, S2 and S3 are false

- ☐ 1  
1
- ☒ 2 (Chosen Option)  
2 (Chosen Option)
- ☐ 3  
3
- ☐ 4  
4

Question No. 37 / Question ID 87024

Marks: 2.00

Which of the following transforms in 2 dimension is used to resize a 2-dimensional object?

1. Translation
2. Rotation
3. Scaling
4. Shearing

Which of the following transforms in 2 dimension is used to resize a 2-dimensional object?

1. Translation
  2. Rotation
  3. Scaling
  4. Shearing
- ☐ 1  
1
- ☐ 2  
2
- ☒ 3 (Chosen Option)  
3 (Chosen Option)
- ☐ 4  
4

Question No. 38 / Question ID 87025

Marks: 2.00

Match List I with List II

LIST I		LIST II	
A.	Bezier curves	I.	3 dim objects that have translation rotational symmetry
B.	B-Splines	II.	Fractal geometry
C.	Sweep representations	III.	Bias and tension
D.	Natural objects	IV.	painting drawing CAD

Choose the correct answer from the options given below:

1. A-IV B-I C-III D-II

2. A-II B-III C-IV D-I

3. A-IV B-III C-I D-II

4. A-II B-IV C-I D-III

Match List I with List II

LIST I		LIST II	
A.	Bezier curves	I.	3 dim objects that have translation rotational symmetry
B.	B-Splines	II.	Fractal geometry
C.	Sweep representations	III.	Bias and tension
D.	Natural objects	IV.	painting drawing CAD

Choose the correct answer from the options given below:

1. A-IV B-I C-III D-II

2. A-II B-III C-IV D-I

3. A-IV B-III C-I D-II

4. A-II B-IV C-I D-III

☐ 1 (Chosen Option)

1 (Chosen Option)

☐ 2

2

☐ 3

3

☐ 4

4

Question No. 39 / Question ID 87055

Marks: 2.00

Match List I with List II

LIST I		LIST II	
A.	Scenario testing	I.	To verify the I/O behavior of text object
B.	Regression testing	II.	user acceptance methodology
C.	Component testing	III.	No new bugs after changes in program
D.	Beta testing	IV.	The documentation of a use case

Choose the correct answer from the options given below:

1. A-IV B-III C-II D-I

2. A-II B-I C-III D-IV

3. A-IV B-III C-I D-II

4. A-III B-I C-IV D-II

☐ 1

1

☐ 2

2

☐ 3

3

☐ 4 (Chosen Option)

4 (Chosen Option)

Match List I with List II

LIST I		LIST II	
A.	Scenario testing	I.	To verify the I/O behavior of text object
B.	Regression testing	II.	user acceptance methodology
C.	Component testing	III.	No new bugs after changes in program
D.	Beta testing	IV.	The documentation of a use case

Choose the correct answer from the options given below:

1. A-IV B-III C-II D-I

2. A-II B-I C-III D-IV

3. A-IV B-III C-I D-II

4. A-III B-I C-IV D-II

Question No. 40 / Question ID 87047

Marks: 2.00



Which of the following is used to determine the cost performance index?

1. Budgeted cost of work performed-budget at completion
2. Budgeted cost of work performed÷budget at completion
3. Budgeted cost of work performed÷Actual cost of work performed
4. Budgeted cost of work performed-Actual cost of work performed

Which of the following is used to determine the cost performance index?

1. Budgeted cost of work performed-budget at completion
2. Budgeted cost of work performed÷budget at completion
3. Budgeted cost of work performed÷Actual cost of work performed
4. Budgeted cost of work performed-Actual cost of work performed

- ☐ 1  
1
- ☐ 2  
2
- ☐ 3  
3
- ☒ 4 (Chosen Option)  
4 (Chosen Option)

Question No. 41 / Question ID 87071

Marks: 2.00

Which of the following parser is most powerful parser? Which of the following parser is most powerful parser?

- |                        |                        |
|------------------------|------------------------|
| 1. Operator precedence | 1. Operator precedence |
| 2. SLR                 | 2. SLR                 |
| 3. Canonical LR        | 3. Canonical LR        |
| 4. LALR                | 4. LALR                |

- ☐ 1  
1
- ☐ 2  
2
- ☒ 3 (Chosen Option)  
3 (Chosen Option)
- ☐ 4  
4

Question No. 42 / Question ID 87027

Marks: 2.00

A B-tree used as an index for a large database table has four levels including the root node. If a new key is inserted in this index, then maximum number of nodes that could be newly created in the process is

1. 5
2. 4
3. 3
4. 2

A B-tree used as an index for a large database table has four levels including the root node. If a new key is inserted in this index, then maximum number of nodes that could be newly created in the process is

1. 5
2. 4
3. 3
4. 2
- ☒ 1 (Chosen Option)  
1 (Chosen Option)
- ☐ 2  
2
- ☐ 3  
3
- ☐ 4  
4

A processor chip is used for application in which 30% of execution time is spent on floating point addition. For the new model of the processor, the design team has come up with redesign the floating point adder to make it twice as fast. What will be possible maximum speed up by this redesign?

1. 2.0
2. 1.06
3. 1.18
4. 2.5

A processor chip is used for application in which 30% of execution time is spent on floating point addition. For the new model of the processor, the design team has come up with redesign the floating point adder to make it twice as fast. What will be possible maximum speed up by this redesign?

1. 2.0
  2. 1.06
  3. 1.18
  4. 2.5
- ☐ 1  
 1  
☐ 2  
 2  
☒ 3 (Chosen Option)  
 3 (Chosen Option)  
☐ 4  
 4

Southerland Hodgeman method is used on Southerland Hodgeman method is used on

- |                     |                     |
|---------------------|---------------------|
| 1. Smooth curves    | 1. Smooth curves    |
| 2. Line segment     | 2. Line segment     |
| 3. Convex polygons  | 3. Convex polygons  |
| 4. Concave polygons | 4. Concave polygons |
- ☐ 1  
 1  
☐ 2  
 2  
☒ 3 (Chosen Option)  
 3 (Chosen Option)  
☐ 4  
 4

What is the output of following code?

```
main ()
{ static float a[ ] = { 13.24, 1.5,4.5,5.4,3.5}
float *j, *k;
j=a;
k= a+4
j= j*2;
k=k/2;
printf ("%f%f", *j, *k);
}
```

1. 13.25, 4.5
2. 1.5, 3.5
3. 13.24, 1.5, 4.5, 5.4, 3.5
4. Illegal use of pointer in main function

- ☐ 1
- ☐ 2
- ☐ 3
- ☒ 4 (Chosen Option)

What is the output of following code?

```
main ()
{ static float a[ ] = { 13.24, 1.5,4.5,5.4,3.5}
float *j, *k;
j=a;
k= a+4
j= j*2;
k=k/2;
printf ("%f%f", *j, *k);
}
```

1. 13.25, 4.5
2. 1.5, 3.5
3. 13.24, 1.5, 4.5, 5.4, 3.5
4. Illegal use of pointer in main function

- ☐ 1
- ☐ 2
- ☐ 3
- ☒ 4 (Chosen Option)

Question No. 46 / Question ID 87018

Marks: 2.00

What is the output of following code?

```
main ()
struct s1
{ char * z;
int i;
struct s1 * p;
}
static struct s1 a [ ] = {
{"Nagpur", 1, a+1}
{"Raipur", 2, a+2}
{"Kanpur", 3, a}
};
struct s1* ptr =a;
printf ( "%s %s %s \n", a[0].z, ptr→z, a[2].p →z); printf ( %s %s %s \n", a[0].z, ptr→z, a[2].p →z);
}
```

1. Nagpur Raipur Kanpur
2. Nagpur Nagpur Nagpur
3. Kanpur Kanpur Kanpur
4. Error

- ☐ 1 (Chosen Option)
- ☐ 2

What is the output of following code?

```
main ()
struct s1
{ char * z;
int i;
struct s1 * p;
}
static struct s1 a [ ] = {
{"Nagpur", 1, a+1}
{"Raipur", 2, a+2}
{"Kanpur", 3, a}
};
struct s1* ptr =a;
printf ( "%s %s %s \n", a[0].z, ptr→z, a[2].p →z); printf ( %s %s %s \n", a[0].z, ptr→z, a[2].p →z);
}
```

1. Nagpur Raipur Kanpur
2. Nagpur Nagpur Nagpur
3. Kanpur Kanpur Kanpur
4. Error



- ☐ 3
- ☐ 3
- ☐ 4
- ☐ 4

Question No. 47 / Question ID 87003

Marks: 2.00

How many integral solutions are there to  $x + y + z + w = 29$ , where  $x \geq 1$ ,  $y \geq 2$ ,  $z \geq 3$  and  $w \geq 0$ ?

- 1. 2400
- 2. 2600
- 3. 2800
- 4. 3000

How many integral solutions are there to  $x + y + z + w = 29$ , where  $x \geq 1$ ,  $y \geq 2$ ,  $z \geq 3$  and  $w \geq 0$ ?

- 1. 2400
- 2. 2600
- 3. 2800
- 4. 3000

- ☐ 1
- ☐ 1
- ☐ 2
- ☐ 2
- ☐ 3 (Chosen Option)
- ☐ 3 (Chosen Option)
- ☐ 4
- ☐ 4

Question No. 48 / Question ID 87037

Marks: 2.00

In a multiuser operating system, 20 requests are made to use a particular resource per hour, on an average. The probability that no request is made in 45 minutes is

- 1.  $e^{-15}$
- 2.  $e^{-5}$
- 3.  $1 - e^{-5}$
- 4.  $1 - e^{-10}$

In a multiuser operating system, 20 requests are made to use a particular resource per hour, on an average. The probability that no request is made in 45 minutes is

- 1.  $e^{-15}$
- 2.  $e^{-5}$
- 3.  $1 - e^{-5}$
- 4.  $1 - e^{-10}$
- ☐ 1
- ☐ 1
- ☐ 2
- ☐ 2
- ☐ 3 (Chosen Option)
- ☐ 3 (Chosen Option)
- ☐ 4
- ☐ 4

Question No. 49 / Question ID 87014

Marks: 2.00

Let  $\oplus$  denote XOR operation. Let 1 and 0 denote the binary constants and  $F$  is the Boolean expression over two variables  $P$  and  $Q$

$$F(P, Q) = ((1 \oplus P) \oplus (P \oplus Q)) \oplus ((P \oplus Q) \oplus (Q \oplus 0))$$

Which of the following is equivalent expression to  $F$ ?

1.  $P \oplus Q$
2.  $P + Q$
3.  $\overline{P + Q}$
4.  $\overline{P \oplus Q}$

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1.  $P \oplus Q$
2.  $P + Q$
3.  $\overline{P + Q}$
4.  $\overline{P \oplus Q}$

- ☐ 1  
1
- ☐ 2  
2
- ☐ 3 (Chosen Option)  
3 (Chosen Option)
- ☐ 4  
4

Question No. 50 / Question ID 87002

Marks: 2.00

Find the sum of all four digit numbers formed using the digits 1,2,4 and 6.

1. 86,658
2. 88,8858
3. 91,958
4. 93,358

Find the sum of all four digit numbers formed using the digits 1,2,4 and 6.

1. 86,658
2. 88,8858
3. 91,958
4. 93,358

- ☐ 1  
1
- ☐ 2  
2
- ☐ 3 (Chosen Option)  
3 (Chosen Option)
- ☐ 4  
4

Question No. 51 / Question ID 87001

Marks: 2.00

There are  $M$  points on one straight line  $AB$  and  $n$  points on another straight line  $AC$  none of them being  $A$ . How many triangles can be formed with these points as vertices?

1.  $mn(m+n-2)$
2.  $\frac{1}{2}mn(m+n-2)$
3.  $\frac{1}{2}mn(m+n-1)$
4.  $mn(m+n-1)$

There are  $M$  points on one straight line  $AB$  and  $n$  points on another straight line  $AC$  none of them being  $A$ . How many triangles can be formed with these points as vertices?

1.  $mn(m+n-2)$
  2.  $\frac{1}{2}mn(m+n-2)$
  3.  $\frac{1}{2}mn(m+n-1)$
  4.  $mn(m+n-1)$
- ☐ 1  
☐ 2 (Chosen Option)  
☐ 3  
☐ 4

Question No. 52 / Question ID 87059

Marks: 2.00

Given below are two statements: one is labelled as Assertion A and the other is labelled as Reason R.

**Assertion A:** The AVL trees are more balanced as compared to Red Black trees, but they may cause more rotations during insertion and deletion

**Reason R:** A Red Black tree with  $n$  nodes has height that is greater than  $2 \log_2 (n+1)$  and the AVL tree with  $n$  nodes has height less than  $\log_\Phi (\sqrt{5} (n+2)) - 2$  (where  $\Phi$  is golden ratio)

In the light of the above statements, choose the correct answer from the options given below.

1. Both A and R are correct and R is the correct explanation of A
2. Both A and R are correct and R is NOT the correct explanation of A
3. A is true but R is false
4. A is false but R is true

Given below are two statements: one is labelled as Assertion A and the other is labelled as Reason R.

**Assertion A:** The AVL trees are more balanced as compared to Red Black trees, but they may cause more rotations during insertion and deletion

**Reason R:** A Red Black tree with  $n$  nodes has height that is greater than  $2 \log_2 (n+1)$  and the AVL tree with  $n$  nodes has height less than  $\log_\Phi (\sqrt{5} (n+2)) - 2$  (where  $\Phi$  is golden ratio)

In the light of the above statements, choose the correct answer from the options given below.

1. Both A and R are correct and R is the correct explanation of A
2. Both A and R are correct and R is NOT the correct explanation of A
3. A is true but R is false
4. A is false but R is true

- ☐ 1  
☐ 2  
☐ 3 (Chosen Option)  
☐ 4

Question No. 53 / Question ID 87028

Marks: 2.00

Consider the following statements:

- A. A database design is in BCNF if each member of the set of relation schemas that constitutes the design is in BCNF
- B. A BCNF schema can have transitive dependency
- C. It is always possible to obtain a 3NF design without sacrificing a lossless join
- D. There are multivalued dependencies in 4NF

- 1. A, B and C only
- 2. B, C and D only
- 3. A, B and D only
- 4. A, C and D only

Consider the following statements:

- A. A database design is in BCNF if each member of the set of relation schemas that constitutes the design is in BCNF
- B. A BCNF schema can have transitive dependency
- C. It is always possible to obtain a 3NF design without sacrificing a lossless join
- D. There are multivalued dependencies in 4NF

- 1. A, B and C only
- 2. B, C and D only
- 3. A, B and D only
- 4. A, C and D only

- ☐ 1  
1
- ☐ 2  
2
- ☐ 3 (Chosen Option)  
3 (Chosen Option)
- ☐ 4  
4

Question No. 54 / Question ID 87053

Marks: 2.00

Given below are two statements:

Statement I: subsystem models show logical grouping of objects into coherent subsystem

Statement II: State machine models show how objects change their states in response to events.

In the light of the above statements, choose the most appropriate answer from the options given below.

- 1. Both Statement I and Statement II are correct
- 2. Both Statement I and Statement II are incorrect
- 3. Statement I is correct but Statement II is incorrect
- 4. Statement I is incorrect but Statement II is correct

Given below are two statements:

Statement I: subsystem models show logical grouping of objects into coherent subsystem

Statement II: State machine models show how objects change their states in response to events.

In the light of the above statements, choose the most appropriate answer from the options given below.

- 1. Both Statement I and Statement II are correct
- 2. Both Statement I and Statement II are incorrect
- 3. Statement I is correct but Statement II is incorrect
- 4. Statement I is incorrect but Statement II is correct

- ☐ 1 (Chosen Option)  
1 (Chosen Option)



- ☐ 2
- ☐ 3
- ☐ 4

Question No. 55 / Question ID 87005

Marks: 2.00

If  $A = \{4n + 2 \mid n \text{ is a natural number}\}$  and  $B = \{3n \mid n \text{ is a natural number}\}$ . Which of the following is correct for  $A \cap B$ ?

1.  $\{12n^2 + 6n \mid n \text{ is a natural number}\}$
2.  $\{24n - 12 \mid n \text{ is a natural number}\}$
3.  $\{60n + 30 \mid n \text{ is a natural number}\}$
4.  $\{12n - 6 \mid n \text{ is a natural number}\}$

If  $A = \{4n + 2 \mid n \text{ is a natural number}\}$  and  $B = \{3n \mid n \text{ is a natural number}\}$ . Which of the following is correct for  $A \cap B$ ?

1.  $\{12n^2 + 6n \mid n \text{ is a natural number}\}$
2.  $\{24n - 12 \mid n \text{ is a natural number}\}$
3.  $\{60n + 30 \mid n \text{ is a natural number}\}$
4.  $\{12n - 6 \mid n \text{ is a natural number}\}$

- ☐ 1 (Chosen Option)
- ☐ 1 (Chosen Option)
- ☐ 2
- ☐ 3
- ☐ 4

Question No. 56 / Question ID 87031

Marks: 2.00

Let  $R(A, B, C, D, F)$  be a relational schema with following functional dependencies:

$C \rightarrow F, E \rightarrow A, EC \rightarrow D, A \rightarrow B$ . Which of the following is a key for  $R$ ?

1. CD
2. EC
3. AE
4. AC

Let  $R(A, B, C, D, F)$  be a relational schema with following functional dependencies:

$C \rightarrow F, E \rightarrow A, EC \rightarrow D, A \rightarrow B$ . Which of the following is a key for  $R$ ?

1. CD
  2. EC
  3. AE
  4. AC
- ☐ 1
  - ☐ 2
  - ☐ 3 (Chosen Option)
  - ☐ 4

Question No. 57 / Question ID 87007

Marks: 2.00

Let  $(\mathbb{Z}, +)$  denote the group of all integers under addition. Then the number of all automorphisms of  $(\mathbb{Z}, +)$  is

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

Let  $(\mathbb{Z}, +)$  denote the group of all integers under addition. Then the number of all automorphisms of  $(\mathbb{Z}, +)$  is

1. 1
  2. 2
  3. 3
  4. 4
- ☐ 1  
1
- ☐ 2  
2
- ☒ 3 (Chosen Option)  
3 (Chosen Option)
- ☐ 4  
4

Question No. 58 / Question ID 87046

Marks: 2.00

An observational technique that can be used to understand operational process and help to derive requirement for software to support operational process is known as

1. Requirement specification
2. Structural specification
3. Ethnography
4. Natural language specification

An observational technique that can be used to understand operational process and help to derive requirement for software to support operational process is known as

1. Requirement specification
  2. Structural specification
  3. Ethnography
  4. Natural language specification
- ☒ 1 (Chosen Option)  
1 (Chosen Option)
- ☐ 2  
2
- ☐ 3  
3
- ☐ 4  
4

Question No. 59 / Question ID 87033

Marks: 2.00

Given the basic E R diagram and relational model, which of the the following is incorrect?

1. An attribute of an entity can have more than one value
2. An attribute of an entity can be composite
3. In a row of relational table, an attribute can have more than one value
4. In a row of a relational table, an attribute can have exactly one value or a NULL value

Given the basic E R diagram and relational model, which of the the following is incorrect?

1. An attribute of an entity can have more than one value
2. An attribute of an entity can be composite
3. In a row of relational table, an attribute can have more than one value
4. In a row of a relational table, an attribute can have exactly one value or a NULL value

- ☐ 1  
☐ 2  
☐ 3  
☐ 4 (Chosen Option)  
☐ 4 (Chosen Option)

Question No. 60 / Question ID 87010

Marks: 2.00

Match List I with List II

LIST I		LIST II	
A.	PERT	I.	used for non repetitive jobs
B.	Optimistic time	II.	Used for repetitive jobs
C.	CPM	III.	The shortest possible time to complete the activity if all goes well
D.	Pessimistic time	IV.	The longest time that an activity takes

Choose the correct answer from the options given below:

1. A-III B-IV C-II D-I
2. A-IV B-I C-II D-III
3. A-I B-III C-II D-II
4. A-I B-III C-II D-IV

Match List I with List II

LIST I		LIST II	
A.	PERT	I.	used for non repetitive jobs
B.	Optimistic time	II.	Used for repetitive jobs
C.	CPM	III.	The shortest possible time to complete the activity if all goes well
D.	Pessimistic time	IV.	The longest time that an activity takes

Choose the correct answer from the options given below:

1. A-III B-IV C-II D-I
2. A-IV B-I C-II D-III
3. A-I B-III C-II D-II
4. A-I B-III C-II D-IV

- ☐ 1  
☐ 1  
☐ 2  
☐ 2  
☐ 3  
☐ 3  
☐ 4 (Chosen Option)  
☐ 4 (Chosen Option)

Question No. 61 / Question ID 87015

Marks: 2.00

Match List I with List II

LIST I		LIST II	
A.	$A \Delta B$	I.	$(A - B) \cup (A - C)$
B.	$A - (B \cup C)$	II.	$(A - B) \cap (A - C)$
C.	$A - (B \cap C)$	III.	$(A - B) \cup (B - A)$
D.	$A \cap (B - C)$	IV.	$(A \cap B) - (A \cap C)$

Match List I with List II

LIST I		LIST II	
A.	$A \Delta B$	I.	$(A - B) \cup (A - C)$
B.	$A - (B \cup C)$	II.	$(A - B) \cap (A - C)$
C.	$A - (B \cap C)$	III.	$(A - B) \cup (B - A)$
D.	$A \cap (B - C)$	IV.	$(A \cap B) - (A \cap C)$

Choose the correct answer from the options given below: Choose the correct answer from the options given below:

1. A-III B-II C-I D-IV
  2. A-II B-III C-IV D-I
  3. A-IV B-III C-I D-II
  4. A-IV B-I C-III D-II
- ☐ 1 (Chosen Option)
1. A-III B-II C-I D-IV
  2. A-II B-III C-IV D-I
  3. A-IV B-III C-I D-II
  4. A-IV B-I C-III D-II

1 (Chosen Option)

- ☐ 2
- ☐ 2
- ☐ 3
- ☐ 3
- ☐ 4
- ☐ 4

Question No. 62 / Question ID 87061

Marks: 2.00

Given below are two statements: one is labelled as Assertion A and the other is labelled as Reason R.

**Assertion A:** It is possible to create doubly linked list using only one pointer with every node.

**Reason R:** By storing the XOR of the addresses of the previous and next nodes.

In the light of the above statements, choose the most appropriate answer from the options given below.

- 1. Both A and R are true and R is the correct explanation of A
- 2. Both A and R are true but R is NOT the correct explanation of A
- 3. A is true but R is false
- 4. A is false but R is true

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- 3. A is true but R is false
- 4. A is false but R is true

- ☐ 1 (Chosen Option)
- ☐ 1 (Chosen Option)
- ☐ 2
- ☐ 2
- ☐ 3
- ☐ 3
- ☐ 4
- ☐ 4

Question No. 63 / Question ID 87060

Marks: 2.00



Given below are two statements:

Let  $f(n)$  and  $g(n)$  be asymptotically positive functions. The following conjectures are given

Statement I:  $f(n) \geq 1$  and  $f(n) = O(g(n)) \Rightarrow g(n) = \Omega(f(n))$

Statement II:  $f(n) = O(g(n)) \Rightarrow \lg(f(n)) = O(\lg(g(n)))$  where  $\lg(g(n)) \geq 1$  for all sufficient large  $n$ .

In the light of the above statements, choose the most appropriate answer from the options given below.

1. Both Statement I and Statement II are correct
2. Both Statement I and Statement II are incorrect
3. Statement I is correct but Statement II is incorrect
4. Statement I is incorrect but Statement II is correct

Given below are two statements:

Let  $f(n)$  and  $g(n)$  be asymptotically positive functions. The following conjectures are given

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In the light of the above statements, choose the most appropriate answer from the options given below.

1. Both Statement I and Statement II are correct
2. Both Statement I and Statement II are incorrect
3. Statement I is correct but Statement II is incorrect
4. Statement I is incorrect but Statement II is correct

- ☐ 1  
1
- ☐ 2  
2
- ☐ 3 (Chosen Option)  
3 (Chosen Option)
- ☐ 4  
4

Question No. 64 / Question ID 87083

Marks: 2.00

Which of the following is not a property of a good system for representation of knowledge in a particular domain?

1. Presentation adequacy
2. infrential adequacy
3. Infential efficiency
4. acquisitional efficiency

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1. Presentation adequacy
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4. acquisitional efficiency

- ☐ 1  
1
- ☐ 2  
2
- ☐ 3 (Chosen Option)  
3 (Chosen Option)
- ☐ 4  
4

Question No. 65 / Question ID 87082

Marks: 2.00

Which is not a basic approach to the problem of conflict resolution in a production system?

1. Assigning a preference based on the rule that matched
2. Assigning a preference based the object that matched
3. Assigning a preference based on the action that the matched rule would perform
4. Assigning a preference based on the action that the matched object would perform

Which is not a basic approach to the problem of conflict resolution in a production system?

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3. Assigning a preference based on the action that the matched rule would perform
4. Assigning a preference based on the action that the matched object would perform

☐ 1 (Chosen Option)  
1 (Chosen Option)

☐ 2  
2

☐ 3  
3

☐ 4  
4

Question No. 66 / Question ID 87013

Marks: 2.00

256 Mb DRAM is organized as a  $32M \times 8$  memory externally and as a  $16K \times 16K$  square array internally. Each row must be refreshed at least once every 50 mili second to forestall loss of data; refreshing one row takes 100 nanoseconds. What fraction of the total memory bandwidth is lost to refresh cycles?

1. 6.6%
2. 3.3%
3. 9.9%
4. 4.3%

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1. 6.6%
2. 3.3%
3. 9.9%
4. 4.3%

☐ 1  
1

☐ 2  
2

☐ 3 (Chosen Option)  
3 (Chosen Option)

☐ 4  
4

Question No. 67 / Question ID 87052

Marks: 2.00

Given below are two statements one is labelled as Assertion A and the other is labelled as Reason R.

**Assertion A:** Validity checks real need of system users

**Reason R:** Completeness checks system user defined requirements.

In the light of the above statements, choose the correct answer from the options given below.

1. Both A and R are true and R is the correct explanation of A
2. Both A and R are true but R is NOT the correct explanation of A
3. A is true but R is false
4. A is false but R is true

Given below are two statements: one is labelled as Assertion A and the other is labelled as Reason R.

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In the light of the above statements, choose the correct answer from the options given below.

1. Both A and R are true and R is the correct explanation of A
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3. A is true but R is false
4. A is false but R is true

- ☐ 1  
1
- ☐ 2  
2
- ☒ 3 (Chosen Option)  
3 (Chosen Option)
- ☐ 4  
4

**Question No. 68 / Question ID 87044**

Marks: 2.00

Given below are two statements:

Which of the following statement/s is/are correct with respect to virtual memory

Statement I: Address translation is performed for every logical address used during the execution of a program

Statement II: A program can execute only when all of its components are loaded in the memory

In the light of the above statements, choose the most appropriate answer from the options given below.

1. Both Statement I and Statement II are correct
2. Both Statement I and Statement II are incorrect
3. Statement I is correct but Statement II is incorrect
4. Statement I is incorrect but Statement II is correct

Given below are two statements:

Which of the following statement/s is/are correct with respect to virtual memory

Statement I: Address translation is performed for every logical address used during the execution of a program

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In the light of the above statements, choose the most appropriate answer from the options given below.

1. Both Statement I and Statement II are correct
2. Both Statement I and Statement II are incorrect
3. Statement I is correct but Statement II is incorrect
4. Statement I is incorrect but Statement II is correct



- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4 (Chosen Option)
- ☐ 4 (Chosen Option)

Question No. 69 / Question ID 87074

Marks: 2.00

- A. The set of turning machine codes for TM's that accept all inputs that are palindromes (possible along with some other inputs) is decidable
- B. The language of codes for TM's M that when started with blank tape , eventually write a 1 somewhere on the tape is undecidable
- C. The language accepted by a TM M is  $L(M)$  is always recursive
- D. Post's correspondence problem is undecidable

Choose the correct answer from the options given below:

- 1. A, B and C only
- 2. B, C and D only
- 3. A and C only
- 4. B and D only
- A. The set of turning machine codes for TM's that accept all inputs that are palindromes (possible along with some other inputs) is decidable
- B. The language of codes for TM's M that when started with blank tape , eventually write a 1 somewhere on the tape is undecidable
- C. The language accepted by a TM M is  $L(M)$  is always recursive
- D. Post's correspondence problem is undecidable

Choose the correct answer from the options given below:

- 1. A, B and C only
- 2. B, C and D only
- 3. A and C only
- 4. B and D only
- ☐ 1
- ☐ 1
- ☐ 2
- ☐ 2
- ☐ 3 (Chosen Option)
- ☐ 3 (Chosen Option)
- ☐ 4
- ☐ 4

Question No. 70 / Question ID 87080

Marks: 2.00



Match List I with List II

LIST I		LIST II	
A.	CDMA	I.	It provides mobile internet connection with faster data transfer rates
B.	GSM	II.	It allows user to connect to a network or to other devices over wireless channel
C.	UMTS	III.	Accessing mechanism for multiple transmitters over a single channel
D.	WiFi	IV.	It is a cellular technology that employs hybrid of FDMA and TDMA

Choose the correct answer from the options given below:

1. A-III    B-IV    C-II    D-I
2. A-III    B-IV    C-I    D-II
3. A-II    B-III    C-IV    D-I
4. A-II    B-I    C-IV    D-III

Match List I with List II

LIST I		LIST II	
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C.	UMTS	III.	Accessing mechanism for multiple transmitters over a single channel
D.	WiFi	IV.	It is a cellular technology that employs hybrid of FDMA and TDMA

Choose the correct answer from the options given below:

1. A-III    B-IV    C-II    D-I
2. A-III    B-IV    C-I    D-II
3. A-II    B-III    C-IV    D-I
4. A-II    B-I    C-IV    D-III

- ☐ 1 (Chosen Option)
- ☐ 1 (Chosen Option)
- ☐ 2
- ☐ 2
- ☐ 3
- ☐ 3
- ☐ 4
- ☐ 4

Question No. 71 / Question ID 87004

Marks: 2.00

Let  $N$  denote the set of all natural numbers and  $R$  be the relation on  $N \times N$  defined by  $(a,b)R(c,d)$ , if  $ad(b+c) = bc(a+d)$ . Then  $R$  is

1. Symmetric only
2. Reflexive only
3. Transitive only
4. An equivalence relation

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1. Symmetric only
2. Reflexive only
3. Transitive only
4. An equivalence relation

- ☐ 1
- ☐ 1
- ☐ 2
- ☐ 2
- ☐ 3 (Chosen Option)
- ☐ 3 (Chosen Option)
- ☐ 4
- ☐ 4

Question No. 72 / Question ID 87075

Marks: 2.00

Consider following statements:

- A. A context free language is generated by LR(o) grammar if and only if it is accepted by a deterministic pushdown automata and has prefix property
- B. If M1 is the single tape TM simulating multilape TM M, then time taken by M1 to simulate n moves is  $(n^3)$
- C. Push down automata behaves like a Turning machine when it has one auxiliary memory.
- D.  $L = \{a^n b^n c^n : n \geq 1\}$  is not context free but context sensitive.

Choose the correct answer from the options given below:

- 1. A, B and C only
- 2. A, B only
- 3. C, D only
- 4. B, C only

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- A. A context free language is generated by LR(o) grammar if and only if it is accepted by a deterministic pushdown automata and has prefix property
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- C. Push down automata behaves like a Turning machine when it has one auxiliary memory.
- D.  $L = \{a^n b^n c^n : n \geq 1\}$  is not context free but context sensitive.

Choose the correct answer from the options given below:

- 1. A, B and C only
  - 2. A, B only
  - 3. C, D only
  - 4. B, C only
- ☐ 1  
1
- ☐ 2  
2
- ☐ 3 (Chosen Option)  
3 (Chosen Option)
- ☐ 4  
4

**Question No. 73 / Question ID 87058**

Marks: 2.00

Consider a hash table of size seven with starting index zero and a hash function  $(6x + 3) \bmod 4$ . Assuming the hash table is initially empty. Which of the following is the content of the table when the sequence 1,3,8,10,5, is inserted into the table using closed hashing? Here "\_\_\_" denotes an empty location in the table.

- 1. 1,3,8,10,5,\_,\_
- 2. 3,8,1,\_,10,\_,5
- 3. \_,3,8,1,\_,10,5
- 4. \_,1,3,8,10,5,\_,\_

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- 1. 1,3,8,10,5,\_,\_
  - 2. 3,8,1,\_,10,\_,5
  - 3. \_,3,8,1,\_,10,5
  - 4. \_,1,3,8,10,5,\_,\_
- ☐ 1  
1
- ☐ 2  
2
- ☐ 3 (Chosen Option)  
3 (Chosen Option)
- ☐ 4  
4

**Question No. 74 / Question ID 87023**

Marks: 2.00

Consider the rectangle with vertices (0,0), (0,2), (3,0), (3,2). There is scaling of 2 towards x-axis and 3 towards y-axis. The new coordinates of the rectangle are

1. (0,0), (6,0), (0,4), (6,4)
2. (0,0), (6,0), (0,4), (3,2)
3. (0,0), (6,0), (0,6), (6,6)
4. (0,0), (4,0), (0,6), (4,6)

Consider the rectangle with vertices (0,0), (0,2), (3,0), (3,2). There is scaling of 2 towards x-axis and 3 towards y-axis. The new coordinates of the rectangle are

1. (0,0), (6,0), (0,4), (6,4)
2. (0,0), (6,0), (0,4), (3,2)
3. (0,0), (6,0), (0,6), (6,6)
4. (0,0), (4,0), (0,6), (4,6)

- ☐ 1  
1
- ☐ 2  
2
- ☐ 3  
3
- ☒ 4 (Chosen Option)  
4 (Chosen Option)

Question No. 75 / Question ID 87038

Marks: 2.00

Consider the following table of arrival time and burst time for three processes P0,P1 P2:

Process	arrival time	Burst time
P0	0 ms	7
P1	1 ms	3
P2	2 ms	7

The pre-emptive shortest job first scheduling algorithm is used. Scheduling is carried out only at arrival or completion of a process. What is the average waiting time for the three processes?

1. 3 ms
2. 3.67 ms
3. 4.47 ms
4. 4 ms

Consider the following table of arrival time and burst time for three processes P0,P1 P2:

Process	arrival time	Burst time
P0	0 ms	7
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1. 3 ms
  2. 3.67 ms
  3. 4.47 ms
  4. 4 ms
- ☒ 1 (Chosen Option)  
1 (Chosen Option)
- ☐ 2  
2
- ☐ 3  
3
- ☐ 4  
4

Question No. 76 / Question ID 87032

Marks: 2.00

Which of the following scenario may lead to an irrecoverable error in a database system?

1. A transaction writes a data item after it is read by an uncommitted transaction
2. A transaction reads a data item after it is read by an uncommitted transaction
3. A transaction reads a data item after it is written by a committed transactions
4. A transaction reads a data item after it is written by an uncommitted transaction.

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2. A transaction reads a data item after it is read by an uncommitted transaction
3. A transaction reads a data item after it is written by a committed transactions
4. A transaction reads a data item after it is written by an uncommitted transaction.

☐ 1 (Chosen Option)

1 (Chosen Option)

☐ 2

2

☐ 3

3

☐ 4

4

Question No. 77 / Question ID 87008

Marks: 2.00

Let  $R = \{x \mid x \in N, x \text{ is multiple of } 3 \text{ and } x \leq 100\}$  and  $S = \{x \mid x \in N, x \text{ is a multiple of } 5 \text{ and } x < 100\}$ . What is the number of elements in  $(R \cap S) \times (S \cap R)$ ?

1. 36

2. 33

3. 20

4. 6

Let  $R = \{x \mid x \in N, x \text{ is multiple of } 3 \text{ and } x \leq 100\}$  and  $S = \{x \mid x \in N, x \text{ is a multiple of } 5 \text{ and } x < 100\}$ . What is the number of elements in  $(R \cap S) \times (S \cap R)$ ?

1. 36

2. 33

3. 20

4. 6

☐ 1 (Chosen Option)

1 (Chosen Option)

☐ 2

2

☐ 3

3

☐ 4

4

Question No. 78 / Question ID 87054

Marks: 2.00



Consider the following statements:

- A. Dynamic metrics are collected by measurements made of a program in execution
- B. Static metrics are collected by measurements made of representations of the system
- C. The assessment of software quality is an objective process
- D. An important part of quality assurance in the selection of standards that should apply to the software development process.

Choose the correct answer from the options given below:

- 1. A, B C only
- 2. B, C and D only
- 3. A, C and D only
- 4. A, B and D only

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- A. Dynamic metrics are collected by measurements made of a program in execution
- B. Static metrics are collected by measurements made of representations of the system
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Choose the correct answer from the options given below:

- 1. A, B C only
- 2. B, C and D only
- 3. A, C and D only
- 4. A, B and D only

- ☐ 1
- 1
- ☐ 2
- 2
- ☐ 3 (Chosen Option)
- 3 (Chosen Option)
- ☐ 4
- 4

Question No. 79 / Question ID 87072

Marks: 2.00

Which phase of compiler checks the grammar of programming? Which phase of compiler checks the grammar of programming?

- 1. Code optimization
- 2. Semantic analysis
- 3. Code generators
- 4. Syntax analysis

- ☐ 1
- 1
- ☐ 2 (Chosen Option)
- 2 (Chosen Option)
- ☐ 3
- 3
- ☐ 4
- 4

- 1. Code optimization
- 2. Semantic analysis
- 3. Code generators
- 4. Syntax analysis

Question No. 80 / Question ID 87043

Marks: 2.00

Given below are two statements one is labelled as Assertion A and the other is labelled as Reason R.

A virtual memory system uses first-in first-out page replacement policy and allocates a fixed number of frames to a process

**Assertion A:** Increasing number of page frames allocated to a process sometimes increases the page fault rate.

**Reason R:** Some programs do not exhibit locality of reference.

In the light of the above statements, choose the correct answer from the options given below.

1. Both A and R are true and R is the correct explanation of A
2. Both A and R are true but R is NOT the correct explanation of A
3. A is true but R is false
4. A is false but R is true

Given below are two statements: one is labelled as Assertion A and the other is labelled as Reason R.

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1. Both A and R are true and R is the correct explanation of A
2. Both A and R are true but R is NOT the correct explanation of A
3. A is true but R is false
4. A is false but R is true

- ☐ 1  
1
- ☐ 2  
2
- ☐ 3 (Chosen Option)  
3 (Chosen Option)
- ☐ 4  
4

Question No. 81 / Question ID 87081

Marks: 2.00

Which is not the component of the natural language understanding process?

1. Morphological analysis
2. Semantic analysis
3. Pragmatic analysis
4. Meaning analysis

Which is not the component of the natural language understanding process?

1. Morphological analysis
2. Semantic analysis
3. Pragmatic analysis
4. Meaning analysis

- ☐ 1  
1
- ☐ 2 (Chosen Option)  
2 (Chosen Option)
- ☐ 3  
3
- ☐ 4  
4

Question No. 82 / Question ID 87049

Marks: 2.00

The following table shows the time between failures for a software :

Error number	1	2	3	4	5
time since last failure (Hours)	6	4	8	5	6

The reliability of the system for one hour operation assuming an exponential model is-

1.  $e^{-9/29}$
2.  $e^{-7/29}$
3.  $e^{-5/29}$
4.  $e^{-3/29}$

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1.  $e^{-9/29}$
  2.  $e^{-7/29}$
  3.  $e^{-5/29}$
  4.  $e^{-3/29}$
- ☐ 1 (Chosen Option)  
☐ 1 (Chosen Option)  
☐ 2  
☐ 2  
☐ 3  
☐ 3  
☐ 4  
☐ 4

Question No. 83 / Question ID 87050

Marks: 2.00

Consider a popular sports news site. At a given moment, 20,000 concurrent users submit a request (a transaction, T) once every 2 minutes on average. Each transaction requires the webapp to download a new article that on average has 3k bytes in length. What is the throughput?

1. 8 megabits per second
2. 4 megabits per second
3. 6 megabits per second
4. 2 megabits per second

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1. 8 megabits per second
  2. 4 megabits per second
  3. 6 megabits per second
  4. 2 megabits per second
- ☐ 1  
☐ 1  
☐ 2  
☐ 2  
☐ 3 (Chosen Option)  
☐ 3 (Chosen Option)  
☐ 4

## Question No. 84 / Question ID 87019

Marks: 2.00

What will be the output of the following code? What will be the output of the following code?

```
# include < stdio. h>
```

```
int main ( ) {
```

```
int a, b, c;
```

```
a= 0x10; b= 010;
```

```
c= a+b;
```

```
printf ( "%d", c);
```

```
return 0;
```

```
}
```

```
# include < stdio. h>
```

```
int main ( ) {
```

```
int a, b, c;
```

```
a= 0x10; b= 010;
```

```
c= a+b;
```

```
printf ( "%d", c);
```

```
return 0;
```

```
}
```

1. 20
2. 24
3. Garbage
4. error

- ☐ 1  
1
- ☐ 2  
2
- ☒ 3 (Chosen Option)  
3 (Chosen Option)
- ☐ 4  
4

1. 20
2. 24
3. Garbage
4. error

## Question No. 85 / Question ID 87069

Marks: 2.00

Consider the following language :

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$L = \{ w \in \{ a, b, c \}^* : n_a(w) + n_b(w) = n_c(w) \}$

$L = \{ w \in \{ a, b, c \}^* : n_a(w) + n_b(w) = n_c(w) \}$

L is

L is

1. Context free but not linear
2. Not context free
3. Context free and linear
4. Linear

- ☐ 1  
1
- ☐ 2  
2
- ☒ 3 (Chosen Option)  
3 (Chosen Option)
- ☐ 4  
4

1. Context free but not linear
2. Not context free
3. Context free and linear
4. Linear

## Question No. 86 / Question ID 87030

Marks: 2.00



Which one of the following is NOT a part of ACID properties of a database transaction?

1. Atomicity
2. Consistency
3. Isolation
4. Deadlock-freedom

Which one of the following is NOT a part of ACID properties of a database transaction?

1. Atomicity
2. Consistency
3. Isolation
4. Deadlock-freedom

- ☐ 1  
1
- ☐ 2  
2
- ☐ 3  
3
- ☐ 4 (Chosen Option)  
4 (Chosen Option)

Question No. 87 / Question ID 87020

Marks: 2.00

How will you free the memory allocated by the following program? How will you free the memory allocated by the following program?

```
#include <stdio.h>

#include <stdlib.h>

#define MAXROW 3

#define MAXCOL 4

int main ()

{

int ** p, i, j;

p= (int **) malloc (MAXROW * size of (int*));

return 0;

}
```

1. memfree (int p);
2. dealloc (p);
3. malloc (p,0);
4. free (p);

- ☐ 1  
1
- ☐ 2  
2
- ☐ 3  
3
- ☐ 4 (Chosen Option)  
4 (Chosen Option)

```
#include <stdio.h>

#include <stdlib.h>

#define MAXROW 3

#define MAXCOL 4

int main ()

{

int ** p, i, j;

p= (int **) malloc (MAXROW * size of (int*));

return 0;

}
```

1. memfree (int p);
2. dealloc (p);
3. malloc (p,0);
4. free (p);

Question No. 88 / Question ID 87063

Marks: 2.00

- A. If some NP-complete problem P is in P that  $P = NP$       A. If some NP-complete problem P is in P that  $P = NP$   
 B. TSP is in NP      B. TSP is in NP  
 C. SAT is in NP      C. SAT is in NP  
 D. Hamilton circuit problem is not NP-complete      D. Hamilton circuit problem is not NP-complete

Choose the correct answer from the options given below: Choose the correct answer from the options given below:

1. A, B and C only      1. A, B and C only  
 2. B, C and D only      2. B, C and D only  
 3. C, D and A only      3. C, D and A only  
 4. D, A and B only      4. D, A and B only

- ☐ 1 (Chosen Option)  
 1 (Chosen Option)  
☐ 2  
 2  
☐ 3  
 3  
☐ 4  
 4

Question No. 89 / Question ID 87035

Marks: 2.00

Match List I with List II

LIST I		LIST II	
A.	RAID level 2	I.	Bit interleaved parity
B.	RAID level 4	II.	Block interleaved distributed parity
C.	RAID level 5	III.	Error correcting parity
D.	RAID level 3	IV.	Block interleaved parity

Match List I with List II

LIST I		LIST II	
A.	RAID level 2	I.	Bit interleaved parity
B.	RAID level 4	II.	Block interleaved distributed parity
C.	RAID level 5	III.	Error correcting parity
D.	RAID level 3	IV.	Block interleaved parity

Choose the correct answer from the options given below: Choose the correct answer from the options given below:

1. A-IV B-III C-I D-II      1. A-IV B-III C-I D-II  
 2. A-III B-IV C-II D-I      2. A-III B-IV C-II D-I  
 3. A-III B-I C-II D-IV      3. A-III B-I C-II D-IV  
 4. A-I B-III C-IV D-I      4. A-I B-III C-IV D-I

- ☐ 1  
 1  
☐ 2  
 2  
☐ 3 (Chosen Option)  
 3 (Chosen Option)  
☐ 4  
 4

Question No. 90 / Question ID 87078

Marks: 2.00

Consider two hosts P and Q that are connected through a router R. The maximum transfer unit (MTU) value of the link between P and R is 1500 bytes and between R and Q is 820 bytes. A TCP segment of size 1400 bytes is transferred from P to Q through R with IP identification value of 0x1234. Assume that IP header size is 20 bytes. Further the packet is allowed to be fragmented that is Don't fragment (DF) flag in the IP Header is not set by P. Which of the following statement/s is/are true?

- A. Two fragments are created at R and IP datagram size carrying the second fragment is 620 bytes
- B. If the second fragment is lost, then R resends the fragment with IP identification value of 0x1234
- C. If the second fragment lost, then P requires to resend the entire TCP segment.
- D. TCP destination port can be determined by analyzing the second fragment only.

Choose the correct answer from the options given below:

- 1. A, B and C only
- 2. A and C only
- 3. C and D only
- 4. B and D only

Consider two hosts P and Q that are connected through a router R. The maximum transfer unit (MTU) value of the link between P and R is 1500 bytes and between R and Q is 820 bytes. A TCP segment of size 1400 bytes is transferred from P to Q through R with IP identification value of 0x1234. Assume that IP header size is 20 bytes. Further the packet is allowed to be fragmented that is Don't fragment (DF) flag in the IP Header is not set by P. Which of the following statement/s is/are true?

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- C. If the second fragment lost, then P requires to resend the entire TCP segment.
- D. TCP destination port can be determined by analyzing the second fragment only.

Choose the correct answer from the options given below:

- 1. A, B and C only
  - 2. A and C only
  - 3. C and D only
  - 4. B and D only
- ☐ 1  
1
- ☐ 2  
2
- ☐ 3 (Chosen Option)  
3 (Chosen Option)
- ☐ 4  
4

Consider the following program fragment that deals with a table T with 17 rows and 1024 columns, computing an average for each column and printing it to screen (i is row index and j is column index):

```
for j = [ 0..... 1023]{  
temp = 0;  
for i = [0 . . . . 16];  
temp = temp + T [i] [j];  
print (temp/ 17.0) ; }
```

T [i] [j] and temp are 32 bit floating point values and memory is word addressable. The temporary variable temp is kept in a processor register so access to temp does not involve a memory reference. The main memory is page and holds 16 pages of size 1024 words, the page replacement policy is "least recently used ", If T is stored in the virtual address space in row major format.

Consider again that T is stored in column-major format, what is the main memory hit ratio?

1. 80%
2. 95.6%
3. 97.8%
4. 99.9%

Consider the following program fragment that deals with a table T with 17 rows and 1024 columns, computing an average for each column and printing it to screen (i is row index and j is column index):

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Consider again that T is stored in column-major format, what is the main memory hit ratio?

1. 80%
  2. 95.6%
  3. 97.8%
  4. 99.9%
- ☐ 1  
1
- ☐ 2  
2
- ☒ 3 (Chosen Option)  
3 (Chosen Option)
- ☐ 4  
4



Consider the following program fragment that deals with a table T with 17 rows and 1024 columns, computing an average for each column and printing it to screen (i is row index and j is column index):

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Consider that T is stored in column major format, how many page faults will be encountered?

1. 14
2. 15
3. 16
4. 17

Consider the following program fragment that deals with a table T with 17 rows and 1024 columns, computing an average for each column and printing it to screen (i is row index and j is column index):

```
for j = [ 0..... 1023]{
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Consider that T is stored in column major format, how many page faults will be encountered?

1. 14
  2. 15
  3. 16
  4. 17
- ☐ 1  
1  
☐ 2  
2  
☒ 3 (Chosen Option)  
3 (Chosen Option)  
☐ 4  
4

Consider the following program fragment that deals with a table T with 17 rows and 1024 columns, computing an average for each column and printing it to screen (i is row index and j is column index):

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What is fault ratio of row major to column major arrangements ?

1. 1024:1
2. 1301:1
3. 1240:1
4. 9107:8

Consider the following program fragment that deals with a table T with 17 rows and 1024 columns, computing an average for each column and printing it to screen (i is row index and j is column index):

```
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What is fault ratio of row major to column major arrangements ?

1. 1024:1
2. 1301:1
3. 1240:1
4. 9107:8

- ☐ 1 (Chosen Option)  
1 (Chosen Option)
- ☐ 2  
2
- ☐ 3  
3
- ☐ 4  
4

Consider the following program fragment that deals with a table T with 17 rows and 1024 columns, computing an average for each column and printing it to screen (i is row index and j is column index):

```
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How many page faults will be encountered?

1. 16,402
2. 17,408
3. 18,208
4. 18,608

Consider the following program fragment that deals with a table T with 17 rows and 1024 columns, computing an average for each column and printing it to screen (i is row index and j is column index):

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How many page faults will be encountered?

1. 16,402
2. 17,408
3. 18,208
4. 18,608

- ☐ 1  
1
- ☐ 2  
2
- ☐ 3 (Chosen Option)  
3 (Chosen Option)
- ☐ 4  
4

Consider the following program fragment that deals with a table T with 17 rows and 1024 columns, computing an average for each column and printing it to screen (i is row index and j is column index):

```
for j = [ 0..... 1023]{
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What is the main memory hit ratio?

1. 0
2. 1
3. 2
4. 3

Consider the following program fragment that deals with a table T with 17 rows and 1024 columns, computing an average for each column and printing it to screen (i is row index and j is column index):

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for j = [ 0..... 1023]{
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What is the main memory hit ratio?

1. 0
  2. 1
  3. 2
  4. 3
- ☐ 1  
☐ 2  
☒ 3 (Chosen Option)  
☐ 4



IP datagram has arrived with following partial information in the header (in hexadecimal )

45000054000300002006.....

What is the efficiency of this datagram?

1. 76.19%
2. 80.50%
3. 82.24%
4. 85.45%

IP datagram has arrived with following partial information in the header (in hexadecimal )

45000054000300002006.....

What is the efficiency of this datagram?

1. 76.19%
2. 80.50%
3. 82.24%
4. 85.45%

- ☐ 1  
1
- ☐ 2  
2
- ☒ 3 (Chosen Option)  
3 (Chosen Option)
- ☐ 4  
4

Question No. 97 / Question ID 87096

Marks: 2.00

IP datagram has arrived with following partial information in the header (in hexadecimal )

45000054000300002006.....

What is the header size ?

1. 10 bytes
2. 20 bytes
3. 30 bytes
4. 40 bytes

IP datagram has arrived with following partial information in the header (in hexadecimal )

45000054000300002006.....

What is the header size ?

1. 10 bytes
2. 20 bytes
3. 30 bytes
4. 40 bytes

- ☐ 1
- ☐ 2
- ☐ 3 (Chosen Option)
- ☐ 4

Question No. 98 / Question ID 87097

Marks: 2.00

IP datagram has arrived with following partial information in the header (in hexadecimal )

45000054000300002006.....

What is the size of datagram?

- 1. 64 bytes
- 2. 74 bytes
- 3. 84 bytes
- 4. 104 bytes

IP datagram has arrived with following partial information in the header (in hexadecimal )

45000054000300002006.....

What is the size of datagram?

- 1. 64 bytes
- 2. 74 bytes
- 3. 84 bytes
- 4. 104 bytes

- ☐ 1
- ☐ 2
- ☐ 3 (Chosen Option)
- ☐ 4

Question No. 99 / Question ID 87098

Marks: 2.00

IP datagram has arrived with following partial information in the header (in hexadecimal )

45000054000300002006.....

How many more routers can the packet travel to?

1. 22
2. 26
3. 30
4. 32

IP datagram has arrived with following partial information in the header (in hexadecimal )

45000054000300002006.....

How many more routers can the packet travel to?

1. 22
  2. 26
  3. 30
  4. 32
- ☐ 1  
1
- ☐ 2  
2
- ☐ 3  
3
- ☐ 4 (Chosen Option)  
4 (Chosen Option)

**Question No. 100 / Question ID 87099**

Marks: 2.00

IP datagram has arrived with following partial information in the header (in hexadecimal )

45000054000300002006.....

What is the protocol of the payload being carried by the packet?

1. ICMP
2. SCTP
3. TCP protocol
4. IGMP

IP datagram has arrived with following partial information in the header (in hexadecimal )

45000054000300002006.....

What is the protocol of the payload being carried by the packet?

1. ICMP
  2. SCTP
  3. TCP protocol
  4. IGMP
- ☐ 1  
1
- ☐ 2  
2
- ☐ 3 (Chosen Option)  
3 (Chosen Option)
- ☐ 4  
4

