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- Options shown in **green** color and with **✓** icon are correct.
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General Paper

Section Id :	53307251
Section Number :	1
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Sub-Section Number :	1
Sub-Section Id :	533072149
Question Shuffling Allowed :	No

Question Id : 5330723674 Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No Question Pattern Type : NonMatrix

Question Numbers : (1 to 5)

Question Label : Comprehension

The following table shows the proportion of students passed in three different Graduation Streams, namely, Arts, Science and Commerce, from seven different cities A-G, along with the ratio of Males (M) to Females (F) for the three streams among the students. Based on the data in the table, answer the questions that follow.

City-wise details of Graduating students

City	Proportion of passed Students			
	Arts : Science : Commerce	Arts	Science	Commerce
		M : F	M : F	M : F
A	2 : 4 : 5	31 : 14	23 : 27	11 : 7
B	7 : 2 : 4	37 : 33	43 : 32	29 : 21
C	1 : 4 : 2	34 : 16	57 : 43	31 : 29
D	5 : 7 : 4	17 : 13	51 : 33	23 : 17
E	4 : 3 : 8	23 : 17	41 : 34	57 : 23
F	2 : 4 : 3	47 : 28	11 : 7	16 : 11
G	3 : 5 : 4	29 : 21	27 : 24	53 : 47

Sub questions

Question Number : 1 Question Id : 5330723675 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

If the number of males who passed in Commerce from City-G is 2544, then what is the number of students who passed in Arts from City-G ?

- (1) 3600
- (2) 4200
- (3) 4800
- (4) 3400

Question Number : 2 Question Id : 5330723676 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

For City-A, if the total number of males who passed in Arts is 2480, then what is the difference between the number of students who passed in Commerce and that in Science ?

- (1) 600
- (2) 1000
- (3) 1400
- (4) 1800

Question Number : 3 Question Id : 5330723677 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

If the number of students who passed in Commerce from City-F is 3240, then the number of students who passed from City-F is _____% of the number of Science students who passed from City-F.

- (1) 75
- (2) 150
- (3) 180
- (4) 225

Question Number : 4 Question Id : 5330723678 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

If the number of females who passed in Arts from City-C is 768, then the number of males who passed in Commerce from City-C is approximately _____% of the number of students who passed from City-C.

- (1) 14.76
- (2) 18.24
- (3) 27.8
- (4) 32.5

Question Number : 5 Question Id : 5330723679 Question Type : MCQ Option Shuffling : No
Correct Marks : 2 Wrong Marks : 0

The number of males who passed in Commerce from City-F is approximately _____% more than the number of females who passed in Commerce from City-F.

- (1) 31.25
- (2) 47.47
- (3) 45.45
- (4) 42.67

Question Id : 5330723674 Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension
Questions : No Question Pattern Type : NonMatrix
Question Numbers : (1 to 5)
Question Label : Comprehension

निम्न तालिका में सात भिन्न-भिन्न शहरों A-G से कला, विज्ञान व वाणिज्य की तीन स्नातकीय शाखाओं में उत्तीर्ण विद्यार्थियों का अनुपात और विद्यार्थियों के बीच तीन शाखाओं हेतु पुरुषों (M) का महिलाओं (F) के साथ का अनुपात दर्शाया गया है। तालिका में प्रदत्त डाटा के आधार पर आगे पूछे गए प्रश्नों के उत्तर दीजिए :

स्नातकीय विद्यार्थियों का शहर-वार विवरण

शहर	उत्तीर्ण विद्यार्थियों का शहर-वार विवरण			
	कला : विज्ञान : वाणिज्य	कला M : F	विज्ञान M : F	वाणिज्य M : F
A	2 : 4 : 5	31 : 14	23 : 27	11 : 7
B	7 : 2 : 4	37 : 33	43 : 32	29 : 21
C	1 : 4 : 2	34 : 16	57 : 43	31 : 29
D	5 : 7 : 4	17 : 13	51 : 33	23 : 17
E	4 : 3 : 8	23 : 17	41 : 34	57 : 23
F	2 : 4 : 3	47 : 28	11 : 7	16 : 11
G	3 : 5 : 4	29 : 21	27 : 24	53 : 47

Sub questions

Question Number : 1 Question Id : 5330723675 Question Type : MCQ Option Shuffling : No
Correct Marks : 2 Wrong Marks : 0

यदि शहर-G से वाणिज्य में उत्तीर्ण पुरुषों की संख्या 2544 है, तो शहर-G से कला में उत्तीर्ण विद्यार्थियों की संख्या कितनी है?

- (1) 3600
- (2) 4200
- (3) 4800
- (4) 3400

Question Number : 2 Question Id : 5330723676 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

शहर-A के लिए, यदि कला से उत्तीर्ण पुरुषों की कुल संख्या 2480 है, तो वाणिज्य से उत्तीर्ण विद्यार्थियों की संख्या और विज्ञान से उत्तीर्ण विद्यार्थियों की संख्या के बीच का अंतर कितना है?

- (1) 600
- (2) 1000
- (3) 1400
- (4) 1800

Question Number : 3 Question Id : 5330723677 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

यदि शहर-F से वाणिज्य में उत्तीर्ण विद्यार्थियों की संख्या 3240 है, तो शहर-F से उत्तीर्ण होने वाले विद्यार्थियों की संख्या शहर-F से उत्तीर्ण विज्ञान विद्यार्थियों की संख्या का _____% है।

- (1) 75
- (2) 150
- (3) 180
- (4) 225

Question Number : 4 Question Id : 5330723678 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

यदि शहर-C से कला में उत्तीर्ण होने वाली महिलाओं की संख्या 768 है, तो शहर-C से वाणिज्य में उत्तीर्ण पुरुषों की संख्या शहर-C से उत्तीर्ण विद्यार्थियों की संख्या का लगभग _____% है।

- (1) 14.76
- (2) 18.24
- (3) 27.8
- (4) 32.5

Question Number : 5 Question Id : 5330723679 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

शहर-F से वाणिज्य में उत्तीर्ण पुरुषों की संख्या शहर-F से वाणिज्य में उत्तीर्ण होने वाली महिलाओं की संख्या से लगभग _____% अधिक है।

- (1) 31.25
- (2) 47.47
- (3) 45.45
- (4) 42.67

Sub-Section Number :

2

Sub-Section Id :

533072150

Question Shuffling Allowed :

Yes

Question Number : 6 Question Id : 5330723680 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

What among the following can be correctly claimed in the light of 'Assessment Rubrics' ?

- (A) A tool used to interpret and grade students on the basis of some criterion.
- (B) A means to increase subjective evaluation by the evaluator.
- (C) It ensures transparency and fairness in the marking process.
- (D) It provides an opportunity to set arbitrary standards and guidelines for moderation.
- (E) It is an innovative evaluation system.

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

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

Question Number : 6 Question Id : 5330723680 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

'ऑकलन रुब्रिक्स' के प्रकाश में निम्नलिखित में से किसका दावा किया जा सकता है ?

- (A) किसी मानदंड के आधार पर छात्रों की व्याख्या करने और उन्हें श्रेणीबद्ध करने के लिए प्रयोग किया जाने वाला उपकरण
- (B) मूल्यांकनकर्ता द्वारा आत्मनिष्ठ मूल्यांकन बढ़ाने के लिए साधन
- (C) यह अंकन प्रक्रिया में पारदर्शिता और निष्पक्षता सुनिश्चित करता है।
- (D) नियमन के लिए यादृच्छिक मानक और दिशानिर्देश स्थापित करने के लिए अवसर प्रदान करता है।
- (E) यह एक नवाचारी मूल्यांकन प्रणाली है।

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

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

Question Number : 7 Question Id : 5330723681 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Match List - I with List - II.

List - I (Types of Teaching)	List - II (Description)
(A) Macro teaching	(I) A teaching technique especially used in teacher's pre-service education to train them systematically
(B) Micro teaching	(II) An approach where the educators divide the content among themselves and students sit with one educator before moving to the other
(C) Station teaching	(III) A situation in a classroom where two teachers work on a class together
(D) Cooperative teaching	(IV) When a teacher provides instruction to the entire class at one time for an extended period of time

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

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

Question Number : 7 Question Id : 5330723681 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

सूची-I से सूची-II का मिलान कीजिए :

सूची-I (शिक्षण के प्रकार)	सूची-II (विवरण)
(A) व्यापक शिक्षण	(I) ऐसी शिक्षण तकनीक जिसका प्रयोग विशेष रूप से शिक्षक की सेवा-पूर्व शिक्षा में किया जाता है ताकि उन्हें सुव्यवस्थित रूप से प्रशिक्षित किया जा सके।
(B) सूक्ष्म शिक्षण	(II) एक ऐसी पद्धति जिसमें शिक्षक विषय सामग्री को आपस में वितरित कर लेते हैं और छात्र, दूसरे शिक्षक के पास जाने से पूर्व एक शिक्षक के पास बैठते हैं।
(C) स्टेशन शिक्षण	(III) कक्षा में ऐसी स्थिति जहाँ दो शिक्षक साथ-साथ एक कक्षा के संबंध में कार्य करते हैं।
(D) सहकारी शिक्षण	(IV) जहाँ कोई शिक्षक विस्तारित अवधि के लिए एक समय पर पूरी कक्षा के छात्रों को पढ़ाता है।

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

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

Question Number : 8 Question Id : 5330723682 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

What among the following can be ascribed to learning styles ?

- (A) It is a way 'how' the student learns
- (B) They are strengths and preferences of the learners for responding to the stimuli in the environment
- (C) It is 'What' the learner learns
- (D) It is a behavioural pattern developed for any new learning

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

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

Question Number : 8 Question Id : 5330723682 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

निम्नलिखित में से किसे अधिगम शैलियों के लिए उत्तरदायी ठहराया जा सकता है ?

- (A) यह विद्यार्थी के सीखने का एक तरीका है।
- (B) ये, परिवेश में उद्दीपन पर प्रतिक्रिया देने के लिए शिक्षार्थियों की शक्तियाँ और वरीयताएँ हैं।
- (C) यह, शिक्षार्थी द्वारा सीखी गई बातें हैं।
- (D) यह किसी नए अधिगम के लिए विकसित किया गया व्यवहार संबंधी पैटर्न है।

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

- (1) केवल (A) और (B)
- (2) केवल (A) और (C)
- (3) केवल (A), (B) और (D)
- (4) केवल (B), (C) और (D)

Question Number : 9 Question Id : 5330723683 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

What can be correctly inferred about the Traditional Teaching Method and Support System ?

- (A) Teacher is responsible to control the class and teach with the usage of blackboard
- (B) It is also known as 'Back-to Basics' System.
- (C) The student carries the responsibilities to use self-learning tools.
- (D) Virtual labs are used as one of the Teaching tools.
- (E) Charts, Maps and Textbooks are the prime resources and handouts are used by the teacher

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

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

Question Number : 9 Question Id : 5330723683 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

परंपरागत शिक्षण पद्धति और सहायता प्रणाली के बारे में निम्नलिखित में से किसे सही ढंग से आशयित किया जा सकता है ?

- शिक्षक, कक्षा को नियंत्रित करने तथा ब्लैकबोर्ड का इस्तेमाल कर पढ़ाने के लिए उत्तरदायी होता है।
- इसे 'बैंक टू बेसिक्स' प्रणाली के रूप में भी जाना जाता है।
- स्व-शिक्षण उपकरणों का प्रयोग करने की जिम्मेदारी छात्रों की होती है।
- आभासी प्रयोगशालाओं (वर्चुअल लैब्स) का प्रयोग एक शिक्षण उपकरण के रूप में किया जाता है।
- चार्ट, मानचित्र और पाठ्यपुस्तक प्रमुख संसाधन होते हैं और शिक्षक द्वारा हैंडआउट का प्रयोग किया जाता है।

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

- केवल (B) और (C)
- केवल (A), (B) और (D)
- केवल (D) और (E)
- केवल (A), (B) और (E)

Question Number : 10 Question Id : 5330723684 Question Type : MCQ Option Shuffling : No
Correct Marks : 2 Wrong Marks : 0

What among the following is incorrect about SWAYAM Prabha ?

- It was launched by Sri Abul Kalam Azad.
- Satellite is used for telecasting the educational contents through DTH channels.
- The web portal of SWAYAM Prabha is maintained by INFLIBNET, Gujarat.
- The contents for SWAYAM Prabha are provided by NPTEL, IITs, UGC, CEC and IGNOU.

Question Number : 10 Question Id : 5330723684 Question Type : MCQ Option Shuffling : No
Correct Marks : 2 Wrong Marks : 0

'स्वयम प्रभा' के बारे में निम्नलिखित कौन-सा कथन गलत है ?

- इसकी शुरुआत श्री अबुल कलाम आजाद ने की थी।
- डी.टी.एच. चैनलों के माध्यम से शिक्षा पाठ्य सामग्री के प्रसारण के लिए सैटेलाइट का प्रयोग किया जाता है।
- 'स्वयम प्रभा' के वेब पोर्टल का अनुरक्षण आई.एन.एफ.एल.आई.बी.एन.ई.टी., गुजरात द्वारा किया जाता है।
- 'स्वयम प्रभा' की पाठ्य सामग्री, एन.पी.टी.ई.एल., आई.आई.टी., यू.जी.सी., सीई.सी.सी. और इग्नू द्वारा उपलब्ध करवाई जाती है।

Question Number : 11 Question Id : 5330723685 Question Type : MCQ Option Shuffling : No
Correct Marks : 2 Wrong Marks : 0

A researcher decides to tell participants something false about a research session in order to mislead them. The researcher is using :

- Naturalistic observation
- Role playing
- Active deception
- Dehoaxing

Question Number : 11 Question Id : 5330723685 Question Type : MCQ Option Shuffling : No
Correct Marks : 2 Wrong Marks : 0

एक शोधकर्ता प्रतिभागियों को गुमराह करने के उद्देश्य से उन्हें एक शोध सत्र के संबंध में कुछ असत्य बोलता है। वह शोधकर्ता निम्न में से किसका प्रयोग कर रहा है ?

- (1) स्वाभाविक अवलोकन
- (2) भूमिका निर्वहन
- (3) सक्रिय छल
- (4) छल उद्भासन (डीहोक्सिंग)

Question Number : 12 Question Id : 5330723686 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Which of the following criteria in research relates mainly to the issue of causality ?

- (1) Transferability
- (2) Measurement validity
- (3) External validity
- (4) Internal validity

Question Number : 12 Question Id : 5330723686 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

शोध में निम्न में से कौन सी कसौटी मुख्यतया कारणता के विषय से संबंधित है ?

- (1) अंतरणीयता
- (2) मापन वैधता
- (3) बाह्य वैधता
- (4) आंतरिक वैधता

Question Number : 13 Question Id : 5330723687 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Arrange the data sets with following pairs of mean (\bar{x}) and standard derivation (σ) in increasing order of their coefficient of variation.

- (A) $\bar{x} = 8, \sigma = 1.7$
- (B) $\bar{x} = 11, \sigma = 2.2$
- (C) $\bar{x} = 15, \sigma = 3.6$
- (D) $\bar{x} = 16, \sigma = 3$

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

- (1) (A), (B), (D), (C)
- (2) (B), (D), (C), (A)
- (3) (C), (B), (D), (A)
- (4) (D), (B), (A), (C)

Question Number : 13 Question Id : 5330723687 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

डाटा सेटों के माध्य (\bar{x}) व मानक विचलन (σ) वाले निम्न युग्मों को उनके विचरण गुणांक के बढ़ते क्रम में व्यवस्थित कीजिए :

- (A) $\bar{x} = 8, \sigma = 1.7$
- (B) $\bar{x} = 11, \sigma = 2.2$
- (C) $\bar{x} = 15, \sigma = 3.6$
- (D) $\bar{x} = 16, \sigma = 3$

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

- (1) (A), (B), (D), (C)
- (2) (B), (D), (C), (A)
- (3) (C), (B), (D), (A)
- (4) (D), (B), (A), (C)

Question Number : 14 Question Id : 5330723688 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

According to UGC regulations 2018 on plagiarism, which of the following similarities constitute Level - 1 plagiarism ?

- (A) 12%
- (B) 42%
- (C) 28%
- (D) 56%
- (E) 37%

Choose the **most appropriate** answer from the options given below :

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

Question Number : 14 Question Id : 5330723688 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

साहित्यिक चोरी के संबंध में यू.जी.सी. विनियम 2018 के अनुसार निम्न में से कौन-कौन सी समानताएँ स्तर -1 की साहित्यिक चोरी की होती हैं ?

- (A) 12%
- (B) 42%
- (C) 28%
- (D) 56%
- (E) 37%

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

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

Question Number : 15 Question Id : 5330723689 Question Type : MCQ Option Shuffling : No
Correct Marks : 2 Wrong Marks : 0

Match List - I with List - II.

List - I (Type of variable)	List - II (Example)
(A) Nominal	(I) Satisfaction level
(B) Ordinal	(II) Weight
(C) Interval	(III) Ethnicity
(D) Ratio	(IV) Year of death

Choose the correct answer from the options given below :

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

Question Number : 15 Question Id : 5330723689 Question Type : MCQ Option Shuffling : No
Correct Marks : 2 Wrong Marks : 0

सूची-I से सूची-II का मिलान कीजिए :

सूची-I (चर का प्रकार)	सूची-II (उदाहरण)
(A) नामिक	(I) संतुष्टि स्तर
(B) क्रमसूचक	(II) भार
(C) अंतरावधि	(III) नृजातीयता
(D) अनुपात	(IV) मृत्यु का वर्ष

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

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

Question Number : 16 Question Id : 5330723690 Question Type : MCQ Option Shuffling : No
Correct Marks : 2 Wrong Marks : 0

Which is the first newspaper published in India in modern times ?

- (1) Hickey's Bengal Gazzette
- (2) India Gazette
- (3) Samvad Kaumudi
- (4) Udant Martand

Question Number : 16 Question Id : 5330723690 Question Type : MCQ Option Shuffling : No
Correct Marks : 2 Wrong Marks : 0

भारत में आधुनिक काल में प्रकाशित प्रथम समाचार पत्र कौन-सा है ?

- (1) हिकीस बंगाल गजट
- (2) इंडिया गजट
- (3) संवाद कौमुदी
- (4) उदन्त मार्तण्ड

Question Number : 17 Question Id : 5330723691 Question Type : MCQ Option Shuffling : No
Correct Marks : 2 Wrong Marks : 0

Which of the following can not be treated as the folk tradition of communication in India ?

- (1) Cinema
- (2) Jatra
- (3) Ramleela
- (4) Kumbh Mela

Question Number : 17 Question Id : 5330723691 Question Type : MCQ Option Shuffling : No
Correct Marks : 2 Wrong Marks : 0

किसको भारत में संचार की लोक परंपरा नहीं माना जा सकता है ?

- (1) सिनेमा
- (2) जात्रा
- (3) रामलीला
- (4) कुंभ मेला

Question Number : 18 Question Id : 5330723692 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Arrange the '5 Ws' of communication in proper sequence :

- (A) Why
- (B) When
- (C) What
- (D) Who
- (E) Where

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

- (1) (C), (D), (E), (B) and (A)
- (2) (E), (D), (B), (C) and (A)
- (3) (A), (B), (C), (D) and (E)
- (4) (B), (A), (C), (D) and (E)

Question Number : 18 Question Id : 5330723692 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

संचार के '5 W' (5 क') को उचित अनुक्रम में लिखिए :

- (A) Why (क्यों)
- (B) When (कब)
- (C) What (क्या)
- (D) Who (कौन)
- (E) Where (कहाँ)

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

- (1) (C), (D), (E), (B) और (A)
- (2) (E), (D), (B), (C) और (A)
- (3) (A), (B), (C), (D) और (E)
- (4) (B), (A), (C), (D) और (E)

Question Number : 19 Question Id : 5330723693 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Three major actions in the process of Communication are :

- (A) Receiving
- (B) Sending
- (C) Reviewing
- (D) Interpreting
- (E) Analysing

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

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

Question Number : 19 Question Id : 5330723693 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

संचार की प्रक्रिया में तीन प्रमुख कार्य हैं :

- (A) प्राप्त करना
- (B) प्रेषित करना
- (C) समीक्षा करना (पुनरीक्षण करना)
- (D) व्याख्या करना
- (E) विश्लेषण करना

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

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

Question Number : 20 Question Id : 5330723694 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Match List - I with List - II.

List - I (Applications)	List - II (Communication term)
(A) Interviews	(I) Group Communication
(B) Newspaper	(II) Intrapersonal Communication
(C) Classroom	(III) Interpersonal Communication
(D) Meditation	(IV) Mass Communication

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

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

Question Number : 20 Question Id : 5330723694 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

सूची-I से सूची-II का मिलान कीजिए :

सूची-I

(अनुप्रयोग)

सूची-II

(संचार से संबंधित शब्द)

- | | |
|------------------------|----------------------------|
| (A) साक्षात्कार | (I) सामूहिक संचार |
| (B) समाचार पत्र | (II) अन्तःवैयक्तिक संचार |
| (C) कक्षा | (III) अन्तर्वैयक्तिक संचार |
| (D) ध्यान (मेडिटेशन) | (IV) जन संचार |

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

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

Question Number : 21 Question Id : 5330723695 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

A person sold an item at a loss of 7%. Had he sold the item at a gain of 7.5%, he would have received Rs. 87 more than his selling price. The cost price of the item is :

- (1) Rs. 500
- (2) Rs. 550
- (3) Rs. 600
- (4) Rs. 650

Question Number : 21 Question Id : 5330723695 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

एक व्यक्ति ने 7% की हानि पर एक वस्तु बेची। अगर वह 7.5% के लाभ पर उस वस्तु को बेचता तो विक्रय मूल्य से रु 87 अधिक प्राप्त होते। वस्तु की लागत मूल्य है :

- (1) रु 500
- (2) रु 550
- (3) रु 600
- (4) रु 650

Question Number : 22 Question Id : 5330723696 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

In a race of 500 m run, A beats B by 20 m and C by 80 m. If B and C are running another race of 100 m with exactly same speed as before, then by how many meters will B beat C ?

- (1) 10.0 m
- (2) 8.5 m
- (3) 15.0 m
- (4) 12.5 m

Question Number : 22 Question Id : 5330723696 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

500 मी की दौड़ में, A, B को 20 मी और C को 80 मी. से हराता है। यदि B और C 100 मी. की दौड़, उसी गति से दौड़ते हैं, तो B कितने मीटर से C को हराता है?

- (1) 10.0 मी.
- (2) 8.5 मी.
- (3) 15.0 मी.
- (4) 12.5 मी.

Question Number : 23 Question Id : 5330723697 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Arrange the following fractions in increasing order :

(A) $\frac{12}{17}$

(B) $\frac{13}{19}$

(C) $\frac{8}{11}$

(D) $\frac{16}{23}$

Choose the correct answer from the options given below :

- (1) (B), (D), (A), (C)
- (2) (B), (A), (C), (D)
- (3) (D), (A), (B), (C)
- (4) (D), (B), (C), (A)

Question Number : 23 Question Id : 5330723697 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

निम्नलिखित भिन्नो को आरोही क्रम में व्यवस्थित कीजिए।

(A) $\frac{12}{17}$

(B) $\frac{13}{19}$

(C) $\frac{8}{11}$

(D) $\frac{16}{23}$

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

(1) (B), (D), (A), (C)

(2) (B), (A), (C), (D)

(3) (D), (A), (B), (C)

(4) (D), (B), (C), (A)

Question Number : 24 Question Id : 5330723698 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Identify the numbers that occur in the series 1, 7, 17, 31, 49,

(A) 74

(B) 95

(C) 97

(D) 127

(E) 161

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

(1) (A), (B), (C) only

(2) (C), (D), (E) only

(3) (E), (B), (A) only

(4) (C), (D), (B) only

Question Number : 24 Question Id : 5330723698 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

श्रृंखला 1, 7, 17, 31, 49, में आने वाली संख्याओं की पहचान कीजिए।

- (A) 74
- (B) 95
- (C) 97
- (D) 127
- (E) 161

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

- (1) केवल (A), (B), (C)
- (2) केवल (C), (D), (E)
- (3) केवल (E), (B), (A)
- (4) केवल (C), (D), (B)

Question Number : 25 Question Id : 5330723699 Question Type : MCQ Option Shuffling : No
Correct Marks : 2 Wrong Marks : 0

Match List - I with List - II.

List - I (Word)	List - II (Unique Code)
(A) Q U A K E	(I) K T F U L
(B) O F T E N	(II) V H Q D U
(C) P E A C H	(III) I E Y O U
(D) D R I V E	(IV) J U Y W R

Choose the correct answer from the options given below :

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

Question Number : 25 Question Id : 5330723699 Question Type : MCQ Option Shuffling : No
Correct Marks : 2 Wrong Marks : 0

सूची-I से सूची-II का मिलान कीजिए :

सूची-I (शब्द)	सूची-II (अद्वितीय कूट)
(A) Q U A K E	(I) K T F U L
(B) O F T E N	(II) V H Q D U
(C) P E A C H	(III) I E Y O U
(D) D R I V E	(IV) J U Y W R

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

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

Question Number : 26 Question Id : 5330723700 Question Type : MCQ Option Shuffling : No
Correct Marks : 2 Wrong Marks : 0

Identify the pattern of the Argument in the following “Habits are like a cable. We weave a strand of it everyday and soon it cannot be broken.”

- (1) Causal Argument
- (2) Argument from Analogy
- (3) Argument from Authority
- (4) Argument from Definition

Question Number : 26 Question Id : 5330723700 Question Type : MCQ Option Shuffling : No
Correct Marks : 2 Wrong Marks : 0

निम्नलिखित में युक्ति के पैटर्न की पहचान करें “आदतें केबल के समान होती हैं। हम प्रतिदिन इसका तन्तु बुनते हैं और इसे शीघ्र तोड़ा नहीं जा सकता” :

- (1) कारणात्मक युक्ति
- (2) सादृश्यता से युक्ति
- (3) प्राधिकार से युक्ति
- (4) परिभाषा से युक्ति

Question Number : 27 Question Id : 5330723701 Question Type : MCQ Option Shuffling : No
Correct Marks : 2 Wrong Marks : 0

What in the following can be correctly inferred ? “You know how I know animals have souls ? Because on an average, the lowest animal is a lot nicer and kinder than most of the human beings that inhabit this Earth”.

- (A) Premise : The lowest animal is a lot nicer and kinder than most human beings that inhabit this Earth.
- (B) Premise : Animals have soul
- (C) It is not an argument
- (D) Conclusion : The lowest animal is a lot nicer and kinder than most human beings that inhabit this Earth
- (E) Conclusion : Animals have soul

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

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

Question Number : 27 Question Id : 5330723701 Question Type : MCQ Option Shuffling : No
Correct Marks : 2 Wrong Marks : 0

निम्नलिखित से किस बात का अनुमान लगाया जा सकता है? “आपको ज्ञात है कि मुझे कैसे इस बात की जानकारी है कि पशुओं में आत्मायें होती हैं? क्योंकि औसतन निम्नतम पशु इस पृथ्वी पर रहने वाले अधिकतर अनुष्यों की तुलना में काफी अच्छा और दयालु होता है।”

- (A) आधार वाक्य : निम्नतम पशु इस पृथ्वी पर रहने वाले अधिकतर मनुष्यों की तुलना में काफी अच्छा और दयालु होता है।
- (B) आधारवाक्य : पशुओं में आत्मा होती है।
- (C) यह एक युक्ति नहीं है।
- (D) निष्कर्ष : निम्नतम पशु, इस पृथ्वी पर रहने वाले अधिकतर मनुष्यों की तुलना में काफी अच्छा और दयालु होता है।
- (E) निष्कर्ष : पशुओं में आत्मा होती है।

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

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

Question Number : 28 Question Id : 5330723702 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

What can be inferred correctly from the following ? “No musicians are Greeks. All traders are Musicians. Therefore, no traders are Greeks”

- (A) It represents figure II of the syllogistic argument
- (B) It is an EAE mood
- (C) The term ‘Greeks’ is the major term
- (D) The minor term of the conclusion is distributed
- (E) The middle term is undistributed

Choose the correct answer from the options given below :

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

Question Number : 28 Question Id : 5330723702 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

निम्नलिखित में किस बात का ठीक अनुमान लगाया जा सकता है? “कोई संगीतकार यूनानी नहीं है। सभी व्यापारी संगीतकार हैं। इसलिए कोई भी व्यापारी यूनानी नहीं है।”

- (A) यह न्यायवाक्यीय युक्ति की आकृति II का प्रतिनिधत्व करता है।
- (B) यह ई.ए.ई. (EAE) विन्यास है।
- (C) पद “यूनानी” साध्य पद है।
- (D) निष्कर्ष का उद्देश्य पद व्याप्त है।
- (E) मध्य पद अव्याप्त है।

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

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

Question Number : 29 Question Id : 5330723703 Question Type : MCQ Option Shuffling : No
Correct Marks : 2 Wrong Marks : 0

Match List - I with List - II.

List - I

(Forms of Non-existence)

- (A) Anyonyābhāva
- (B) Atyantābhāva
- (C) Prāgabha
- (D) Pradhvamsābhava

List - II

(Representation)

- (I) Hare's horn
- (II) there is non-existence of the jar now
- (III) This is not that
- (IV) Temporary absence of a thing

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

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

Question Number : 29 Question Id : 5330723703 Question Type : MCQ Option Shuffling : No
Correct Marks : 2 Wrong Marks : 0

सूची-I से सूची-II का मिलान कीजिए :

सूची-I

(अस्तित्व रहित होने के स्वरूप)

- (A) अन्योन्यभाव
- (B) अत्यंताभाव
- (C) प्रागभाव
- (D) प्रध्वंसाभाव

सूची-II

(निरूपण)

- (I) हेयर का होर्न (खरगोश के सींग)
- (II) अब जार का अस्तित्व नहीं है
- (III) 'यह वह नहीं है'
- (IV) किसी वस्तु का अस्थायी तौर पर न होना

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

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

Question Number : 30 Question Id : 5330723704 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Among the following which is correct in the context of Śabda Pramāṇa ?

- (1) For Sāmkhya, a word signifies universal
- (2) For, Jainas, a word signifies a particular
- (3) For old Nyāya, a word symbolizes universal only
- (4) For Vedantins, a word primarily means the class character of individuals

Question Number : 30 Question Id : 5330723704 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

शब्द प्रमाण के सन्दर्भ में निम्नलिखित में से कौन सा सही है ?

- (1) साँख्य के लिये शब्द सामान्य का सूचक है।
- (2) जैन दर्शन के लिये शब्द विशेष का सूचक है।
- (3) पुरातन न्याय के लिये शब्द सामान्य का बोध करवाता है।
- (4) वेदान्तियों के लिये शब्द का मुख्य अर्थ विशेष के जाति-गुण से है।

Question Number : 31 Question Id : 5330723705 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

If $(L)_M$ represents a number L in base-M number system, then what will be the value of $(107)_{16} + (257)_{16}$?

- (1) $(762)_{10}$
- (2) $(862)_{10}$
- (3) $(962)_{10}$
- (4) $(662)_{10}$

Question Number : 31 Question Id : 5330723705 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

यदि बेस-M अंक प्रणाली में $(L)_M$ संख्या L को दर्शाता है, तो $(107)_{16} + (257)_{16}$ का मान क्या होगा ?

- (1) $(762)_{10}$
- (2) $(862)_{10}$
- (3) $(962)_{10}$
- (4) $(662)_{10}$

Question Number : 32 Question Id : 5330723706 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

In computer networking, an IP version-6 is _____ times larger than an IP version-4 address.

- (1) 2
- (2) 4
- (3) 6
- (4) 8

Question Number : 32 Question Id : 5330723706 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

कंप्यूटर नेटवर्किंग में आई.पी. वर्जन-4 एड्रेस की तुलना में आई.पी. वर्जन-6 _____ गुना बड़ा होता है।

- (1) 2
- (2) 4
- (3) 6
- (4) 8

Question Number : 33 Question Id : 5330723707 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Identify the correct order of the following major technological changes A-D in the development of computers based on first to fourth generation of computers :

- (A) Transistors
- (B) Microprocessor
- (C) Vacuum tubes
- (D) Integrated circuits

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

- (1) (A), (C), (D), (B)
- (2) (B), (A), (C), (D)
- (3) (D), (A), (C), (B)
- (4) (C), (A), (D), (B)

Question Number : 33 Question Id : 5330723707 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

कंप्यूटरों की प्रथम पीढ़ी से चौथी पीढ़ी के आधार पर कंप्यूटर के विकास में निम्न प्रमुख प्रौद्योगिकीय परिवर्तनों A-D के सही क्रम की पहचान कीजिए :

- (A) ट्रांजिस्टर
- (B) माइक्रोप्रोसेसर
- (C) निर्वात (वैक्यूम) ट्यूब
- (D) एकीकृत सर्किट

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

- (1) (A), (C), (D), (B)
- (2) (B), (A), (C), (D)
- (3) (D), (A), (C), (B)
- (4) (C), (A), (D), (B)

Question Number : 34 Question Id : 5330723708 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

To record voice narration for your Microsoft PowerPoint presentation, your computer must have :

- (A) Sound card
- (B) An internet connection
- (C) Speakers
- (D) An external video port
- (E) Microphone

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

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

Question Number : 34 Question Id : 5330723708 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

आपकी माइक्रोसॉफ्ट पावर प्वाइंट प्रस्तुति के लिए स्वर वृतांत को रिकार्ड करने के लिए आपके कंप्यूटर में ये अवश्य होने चाहिए :

- (A) ध्वनि (साउंड) कार्ड
- (B) इंटरनेट कनेक्शन
- (C) स्पीकर्स
- (D) एक बाह्य वीडियो पोर्ट
- (E) माइक्रोफोन

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

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

Question Number : 35 Question Id : 5330723709 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Match List - I with List - II.

List - I (Internet Term)	List - II (Description)
(A) Blogs	(I) Allows users to create and edit web pages using a browser
(B) Podcasts	(II) A type of bookmarking where a user "marks" a webpage or photo using text to describe its contents
(C) Tagging	(III) A series of digital media files
(D) Wikis	(IV) Personal internet journals

Choose the correct answer from the options given below :

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

Question Number : 35 Question Id : 5330723709 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

सूची-I से सूची-II का मिलान कीजिए :

सूची-I (इंटरनेट पद)	सूची-II (विवरण)
(A) ब्लाग	(I) प्रयोक्ता को ब्राउजर के प्रयोग से वेब पेजों की रचना करने और संपादन करने देता है।
(B) पॉडकास्ट	(II) एक प्रकार का पुस्तक चिन्हन जिसमें प्रयोक्ता वेब पेज अथवा फोटो की अंतर्वस्तु का वर्णन करने के लिए टेक्सट का प्रयोग कर उसे "चिन्हित" करता है।
(C) टैगिंग	(III) डिजिटल मीडिया फाइलों की शृंखला
(D) विकीज़	(IV) वैयक्तिक इंटरनेट जर्नल

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

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

Question Number : 36 Question Id : 5330723710 Question Type : MCQ Option Shuffling : No
Correct Marks : 2 Wrong Marks : 0

The amount of biomass produced by the plants through photosynthesis minus respiration losses in a given time period is known as :

- (1) Gross Primary Productivity
- (2) Net Primary Productivity
- (3) Gross Ecological Productivity
- (4) Net Secondary Productivity

Question Number : 36 Question Id : 5330723710 Question Type : MCQ Option Shuffling : No
Correct Marks : 2 Wrong Marks : 0

पौधों द्वारा प्रदत्त समय में प्रकाश संश्लेषण द्वारा उत्पन्न जैव मात्रा में से श्वसन के दौरान हुई क्षति घटाने पर शेष को निम्न में से क्या कहा जाता है ?

- (1) सकल प्राथमिक उत्पादकता
- (2) नेट प्राथमिक उत्पादकता
- (3) सकल पारिस्थितिक उत्पादकता
- (4) नेट द्वितीयक उत्पादकता

Question Number : 37 Question Id : 5330723711 Question Type : MCQ Option Shuffling : No
Correct Marks : 2 Wrong Marks : 0

Which among the following fuels produces least amount of soot particles during combustion ?

- (1) Petrol
- (2) Kerosene
- (3) Diesel
- (4) Compressed Natural Gas (CNG)

Question Number : 37 Question Id : 5330723711 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

निम्न में से कौन सा ईंधन दहन के दौरान न्यूनतम मात्रा में कज्जल कण उत्पन्न करता है ?

- (1) पेट्रोल
- (2) मिट्टी का तेल
- (3) डीजल
- (4) संपीडित प्राकृतिक गैस (सी.एन.जी.)

Question Number : 38 Question Id : 5330723712 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Arrange the following states in ascending order according to their area under forest cover :

- (A) Arunachal Pradesh
- (B) Chhattisgarh
- (C) Maharastra
- (D) Odisha
- (E) Madhya Pradesh

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

- (1) (A), (C), (D), (B), (E)
- (2) (C), (D), (B), (A), (E)
- (3) (B), (A), (C), (E), (D)
- (4) (D), (B), (A), (E), (C)

Question Number : 38 Question Id : 5330723712 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

निम्न राज्यों को उनके वनाच्छादित क्षेत्र के आरोही क्रम में व्यवस्थित कीजिए :

- (A) अरुणाचल प्रदेश
- (B) छत्तीसगढ़
- (C) महाराष्ट्र
- (D) ओडिशा
- (E) मध्य प्रदेश

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

- (1) (A), (C), (D), (B), (E)
- (2) (C), (D), (B), (A), (E)
- (3) (B), (A), (C), (E), (D)
- (4) (D), (B), (A), (E), (C)

Question Number : 39 Question Id : 5330723713 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Eye irritation is the common phenomenon during smog. It is mostly caused by :

- (A) Formaldehyde
- (B) Per-oxy acetyl Nitrate
- (C) Ozone
- (D) Acrolin

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

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

Question Number : 39 Question Id : 5330723713 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

धूमकुहा के दौरान आंखों में प्रकोपन सामान्य परिघटना है। अधिकतर यह निम्न के कारण होता है :

- (A) फार्मेलडीहाइड
- (B) परआक्सी ऐसिटाइल नाइट्रेट
- (C) ओजोन
- (D) एक्रोलीन

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

- (1) केवल (A), (B) और (C)
- (2) केवल (A), (B) और (D)
- (3) केवल (C), (D) और (A)
- (4) केवल (B), (C) और (D)

Question Number : 40 Question Id : 5330723714 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Match List - I with List - II.

List - I

(International Treaties)

- (A) Sendai Framework
- (B) Monterrey Concensus
- (C) Beijing Declaration
- (D) Brundtland Report

List - II

(Key Objectives)

- (I) Equality between men and women
- (II) Our common future
- (III) Disaster Risk Reduction
- (IV) Financing for development

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

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

Question Number : 40 Question Id : 5330723714 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

सूची-I से सूची-II का मिलान कीजिए :

सूची-I

(अंतर्राष्ट्रीय संधियां)

- (A) सेन्डाई फ्रेमवर्क
(B) मान्तेरी सहमति
(C) बीजिंग घोषणा
(D) ब्रूंडलैंड रिपोर्ट

सूची-II

(प्रमुख उद्देश्य)

- (I) पुरुषों व स्त्रियों के बीच समानता
(II) हमारा साझा भविष्य
(III) आपदा जोखिम अल्पीकरण
(IV) विकास हेतु वित्तीयन

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

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

Question Number : 41 Question Id : 5330723715 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Arrange the following ancient Indian Institutes from East to West direction.

- (A) Takshashila
(B) Nalanda
(C) Vikramshila
(D) Shardapeeth

Choose the correct answer from the options given below :

- (1) (A), (D), (C), (B)
(2) (B), (C), (A), (D)
(3) (D), (A), (B), (C)
(4) (C), (B), (D), (A)

Question Number : 41 Question Id : 5330723715 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

निम्नलिखित प्राचीन भारतीय संस्थानों को पूरब से पश्चिम दिशा के क्रम में लगाइए।

- (A) तक्षशिला
(B) नालन्दा
(C) विक्रमशिला
(D) शारदापीठ

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

- (1) (A), (D), (C), (B)
(2) (B), (C), (A), (D)
(3) (D), (A), (B), (C)
(4) (C), (B), (D), (A)

Question Number : 42 Question Id : 5330723716 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Which of the following universities were set up in 1916 ?

- (A) Osmania University
- (B) S.N.D.T Women's University
- (C) Mysore University
- (D) Patna University
- (E) Benaras Hindu University

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

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

Question Number : 42 Question Id : 5330723716 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

निम्नलिखित किन विश्वविद्यालयों की स्थापना वर्ष 1916 में की गयी थी ?

- (A) उस्मानिया विश्वविद्यालय
- (B) एस.एन.डी.टी. महिला विश्वविद्यालय
- (C) मैसूर विश्वविद्यालय
- (D) पटना विश्वविद्यालय
- (E) बनारस हिन्दू विश्वविद्यालय

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

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

Question Number : 43 Question Id : 5330723717 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Match List - I with List - II.

List - I (Constitutional Provision of Education)	List - II (Article)
(A) Women's Education	(I) 28
(B) Education of Minorities	(II) 21-A
(C) Secular Education	(III) 15 (Part-II)
(D) Right to Education	(IV) 29 (Part-III)

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

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

Question Number : 43 Question Id : 5330723717 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

सूची-I से सूची-II का मिलान कीजिए :

सूची-I (शिक्षा संबंधी संवैधानिक-प्रावधान)	सूची-II (अनुच्छेद)
(A) महिला-शिक्षा	(I) 28
(B) अल्पसंख्यकों की शिक्षा	(II) 21-A
(C) धर्म निरपेक्ष शिक्षा	(III) 15 (भाग-II)
(D) शिक्षा का अधिकार	(IV) 29 (भाग-III)

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

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

Question Number : 44 Question Id : 5330723718 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Which of the following is known as "One Nation One Student ID" card ?

- (1) Aadhar card
- (2) Pan card
- (3) APAAR card
- (4) Voter's ID card

Question Number : 44 Question Id : 5330723718 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

निम्नलिखित में से किसे "एक देश, एक छात्र आई.डी." कार्ड के रूप में जाना जाता है ?

- (1) आधार कार्ड
- (2) पैन कार्ड
- (3) अपार (एपीपीएआर) कार्ड
- (4) मतदाता पहचान पत्र कार्ड

Question Number : 45 Question Id : 5330723719 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

According to National Credit Framework (NCrF) the credit level earned after Doctoral degree (Ph.D.) will be :

- (1) 7
- (2) 8
- (3) 9
- (4) 10

Question Number : 45 Question Id : 5330723719 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

राष्ट्रीय क्रेडिट रूप रेखा (एन.सी.आर.एफ.) के अनुसार डॉक्टरल उपाधि (पी.एच.डी.) के पश्चात अर्जित होने वाला क्रेडिट लेवल (स्तर) होगा :

- (1) 7
- (2) 8
- (3) 9
- (4) 10

Sub-Section Number : 3
 Sub-Section Id : 533072151
 Question Shuffling Allowed : No

Question Id : 5330723720 Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension
 Questions : No Question Pattern Type : NonMatrix

Question Numbers : (46 to 50)

Question Label : Comprehension

Read the following passage and answer the questions that follow :

Odisha has colourful fairs and festivals and are as numerous as the days of the year. The sacred journey of Lord Jagannath with brother Balabhadra and sister Subhadra from the Jagannath Temple to the divine shrine called the Gundicha Temple is known as the Car Festival or the Rath Yatra. On this occasion, the deities adorn three chariots named Nandigosha, Taladhawaja and Darpadalana respectively. They stay in the divine shrine for nine days and then return to the Jagannath Temple. This journey is called Bahuda Jatra. This grand festival of Odisha is visited by lakhs of devotees from India and abroad who pull the sacred chariots from the Jagannath Temple to the Gundicha Temple and back on a broad road called Badadanda. The festival begins from the second day of Shukla Paksha (bright half) in the month of Ashadha (June-July) every year. This festival of Lord Jagannath, who is worshipped as the Lord of the Universe, is celebrated not only in Puri, but also in many other places in India and abroad.

Sub questions

Question Number : 46 Question Id : 5330723721 Question Type : MCQ Option Shuffling : No
 Correct Marks : 2 Wrong Marks : 0

Whereas the festival of Lord Jagannath is celebrated in many places in India and abroad, it is primarily associated with which city ?

- (1) Bhuvaneswar
- (2) Puri
- (3) Cuttack
- (4) Konark

Question Number : 47 Question Id : 5330723722 Question Type : MCQ Option Shuffling : No
 Correct Marks : 2 Wrong Marks : 0

What are the names of the deities who accompany Lord Jagannath in the Rath Yatra ?

- (1) Subhadra and Balabhadra
- (2) Balabhadra and Shiva
- (3) Subhadra and Hidimba
- (4) Balabhadra and Hidimba

Question Number : 48 Question Id : 5330723723 Question Type : MCQ Option Shuffling : No
 Correct Marks : 2 Wrong Marks : 0

The sacred journey of Lord Jagannath is traditionally undertaken onward to which divine shrine ?

- (1) Jagannath Temple
- (2) Subhadra Temple
- (3) Balabhadra Temple
- (4) Gundicha Temple

Question Number : 49 Question Id : 5330723724 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

The Car Festival is conducted on a broad road that is called _____.

- (1) Darpadalana
- (2) Ashadha
- (3) Badadanda
- (4) Taladhwaja

Question Number : 50 Question Id : 5330723725 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

What is the name assigned to the journey wherein the deities return to the Jagannath Temple after nine days ?

- (1) Rath Yatra
- (2) Wapsi Yatra
- (3) Maha Yatra
- (4) Bahuda Jatra

Question Id : 5330723720 Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No Question Pattern Type : NonMatrix Question Numbers : (46 to 50) Question Label : Comprehension

निम्नलिखित गद्यांश की पढ़िए और दिए गए प्रश्नों के उत्तर दीजिए।

ओडिशा में रंगबिरंगे मेले और त्योहार होते हैं और ये वर्ष में अनेक दिन मनाए जाते हैं। भ्राता बल भद्र और बहन सुभद्रा के साथ भगवान जगन्नाथ की पवित्र यात्रा जगन्नाथ मंदिर से दिव्य मंदिर, गुंडिचा मंदिर तक जाती है जिसे रथ महोत्सव या रथ यात्रा के रूप में जाना जाता है। इस अवसर पर ये देवी-देवता क्रमशः तीन रथों-नंदीघोष, तल ध्वज, दर्पदलन पर विराजमान होते हैं। वे नौ दिन तक दिव्य मंदिर में निवास करते हैं और उसके बाद वापस जगन्नाथ मंदिर आते हैं। इस यात्रा को बहुदा यात्रा कहा जाता है। ओडिशा के इस महान उत्सव में भारत और विदेशों से लाखों भक्त भाग लेते हैं जो विशाल यात्रा मार्ग जिसे बददंदा कहा जाता है, पर पवित्र रथों को जगन्नाथ मंदिर से गुंडिचा मंदिर तक और वापसी की यात्रा में खींचते हैं। यह त्योहार प्रतिवर्ष आषाढ़ माह (जून-जुलाई) में शुक्ल पक्ष के दूसरे दिन से आरंभ होता है। भगवान जगन्नाथ, जिनका ब्रह्मांड के महादेव के रूप में पूजन किया जाता है, का त्योहार केवल पुरी में ही नहीं मनाया जाता है बल्कि भारत एवं विदेश के अनेक स्थानों पर भी मनाया जाता है।

Sub questions

Question Number : 46 Question Id : 5330723721 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

यद्यपि भगवान जगन्नाथ का त्योहार भारत और विदेश के कई स्थानों पर मनाया जाता है, यह प्राथमिक रूप से किस नगर से संबंधित है ?

- (1) भुवनेश्वर
- (2) पुरी
- (3) कटक
- (4) कोणार्क

Question Number : 47 Question Id : 5330723722 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

रथ यात्रा में भगवान जगन्नाथ के साथ रथों पर विराजमान देवी-देवता के नाम क्या हैं ?

- (1) सुभद्रा और बलभद्र
- (2) बलभद्र और शिव
- (3) सुभद्रा और हिदिम्बा
- (4) बलभद्र और हिदिम्बा

Question Number : 48 Question Id : 5330723723 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

भगवान जगन्नाथ की पवित्र यात्रा पारंपरिक रूप से किस दिव्य मंदिर तक जाती है ?

- (1) जगन्नाथ मंदिर
- (2) सुभद्रा मंदिर
- (3) बलभद्र मंदिर
- (4) गुंडिचा मंदिर

Question Number : 49 Question Id : 5330723724 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

रथ महोत्सव एक विशाल पथ पर आयोजित किया जाता है जिसे कहा जाता है ?

- (1) दर्पदलन
- (2) आषाढ़
- (3) बददंदा
- (4) तलध्वज

Question Number : 50 Question Id : 5330723725 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

जब नौ दिन के बाद देवी-देवता वापस जगन्नाथ मंदिर आते हैं, उस यात्रा का क्या नाम है ?

- (1) रथ यात्रा
- (2) वापसी यात्रा
- (3) महा यात्रा
- (4) बहुदा यात्रा

Computer Science and Applications

Section Id :	53307252
Section Number :	2
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	92
Number of Questions to be attempted :	92
Section Marks :	200
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	533072152
Question Shuffling Allowed :	Yes

Question Number : 51 Question Id : 5330723726 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Consider the Grammar :

$$S \rightarrow A$$

$$A \rightarrow \$B\$ | id$$

$$B \rightarrow B, A | A$$

If $I_0 = \text{CLOSURE}(\{[S \rightarrow .A]\})$ then, how many items be in the set for $\text{GOTO}(I_0, \$)$

- (1) 3
- (2) 4
- (3) 5
- (4) 6

Question Number : 51 Question Id : 5330723726 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Consider the Grammar :

$$S \rightarrow A$$

$$A \rightarrow \$B\$ | id$$

$$B \rightarrow B, A | A$$

If $I_0 = \text{CLOSURE}(\{[S \rightarrow .A]\})$ then, how many items be in the set for $\text{GOTO}(I_0, \$)$

- (1) 3
- (2) 4
- (3) 5
- (4) 6

Question Number : 52 Question Id : 5330723727 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Consider the Grammar :

$$T \rightarrow Qx$$

$$Q \rightarrow RS$$

$$R \rightarrow y | \epsilon$$

$$S \rightarrow z | \epsilon$$

Here x, y, z are terminals and T, Q, R, S are non terminals.

What will be the follow set of the non terminal R ?

- (1) $\{x, y\}$
- (2) $\{y, z\}$
- (3) $\{z, x\}$
- (4) $\{\epsilon\}$

Question Number : 52 Question Id : 5330723727 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Consider the Grammar :

$$T \rightarrow Qx$$

$$Q \rightarrow RS$$

$$R \rightarrow y | \epsilon$$

$$S \rightarrow z | \epsilon$$

Here x, y, z are terminals and T, Q, R, S are non terminals.

What will be the follow set of the non terminal R ?

- (1) $\{x, y\}$
- (2) $\{y, z\}$
- (3) $\{z, x\}$
- (4) $\{\epsilon\}$

Question Number : 53 Question Id : 5330723728 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

If L_1 and L_2 are context free languages, which of the following is True about $L_1 \cap L_2$?

- (1) $L_1 \cap L_2$ is context free
- (2) $L_1 \cap L_2$ is Regular
- (3) $L_1 \cap L_2$ is Recursively Enumerable
- (4) $L_1 \cap L_2$ is Context Sensitive

Question Number : 53 Question Id : 5330723728 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

If L_1 and L_2 are context free languages, which of the following is True about $L_1 \cap L_2$?

- (1) $L_1 \cap L_2$ is context free
- (2) $L_1 \cap L_2$ is Regular
- (3) $L_1 \cap L_2$ is Recursively Enumerable
- (4) $L_1 \cap L_2$ is Context Sensitive

Question Number : 54 Question Id : 5330723729 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

_____ is a Self Balancing binary search tree, where the path from the root to the furthest leaf is no more than twice as long as the path from the root to nearest leaf.

- (1) Expression tree
- (2) Game tree
- (3) Red-Black tree
- (4) Threaded tree

Question Number : 54 Question Id : 5330723729 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

_____ is a Self Balancing binary search tree, where the path from the root to the furthest leaf is no more than twice as long as the path from the root to nearest leaf.

- (1) Expression tree
- (2) Game tree
- (3) Red-Black tree
- (4) Threaded tree

Question Number : 55 Question Id : 5330723730 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

```
#include<stdio.h>
void main()
{
    int arr[] = {1, 2, 3, 4, 5};
    int *p = arr;
    printf("%d", *p++);
    printf("%d", *(p+1));
}
```

Find the output of the above code?

- (1) 1, 2
- (2) 1, 3
- (3) 2, 3
- (4) 1, 4

Question Number : 55 Question Id : 5330723730 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

```
#include<stdio.h>
void main()
{
    int arr[] = {1, 2, 3, 4, 5};
    int *p = arr;
    printf("%d", *p++);
    printf("%d", *(p+1));
}
```

Find the output of the above code?

- (1) 1, 2
- (2) 1, 3
- (3) 2, 3
- (4) 1, 4

Question Number : 56 Question Id : 5330723731 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Consider the following C code :

```
#include<stdio.h>
int temp = 0;
int fun(int x, int y)
{
    int z; temp++;
    if (y == 3) return(x*x*x);
    else {
        z = fun(x, y/3);
        return(z*z*z);
    }
}
int main()
{
    fun(4, 81);
    printf("%d", temp);
}
```

What will be the output of the above code ?

- (1) 3
- (2) 4
- (3) 5
- (4) 6

Question Number : 56 Question Id : 5330723731 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Consider the following C code :

```
#include<stdio.h>
int temp = 0;
int fun(int x, int y)
{
    int z; temp++;
    if (y == 3) return(x*x*x);
    else {
        z = fun(x, y/3);
        return(z*z*z);
    }
}
int main()
{
    fun(4, 81);
    printf("%d", temp);
}
```

What will be the output of the above code ?

- (1) 3
- (2) 4
- (3) 5
- (4) 6

Question Number : 57 Question Id : 5330723732 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

```
#include<iostream.h>
using namespace std;
void swap(int &x, int &y)
{
    int temp = x;
    x = y;
    y = temp;
}
int main()
{
    int a = 5, b = 10;
    swap(a,b);
    swap(a,b);
    cout<<a<<" "<<b;
    return 0;
}
```

What will be the output of above code ?

- (1) 5, 10
- (2) 10, 5
- (3) 5, 5
- (4) 10, 10

Question Number : 57 Question Id : 5330723732 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

```
#include<iostream.h>
using namespace std;
void swap(int &x, int &y)
{
    int temp=x;
    x = y;
    y = temp;
}
int main()
{
    int a=5, b=10;
    swap(a,b);
    swap(a,b);
    cout<<a<<" "<<b;
    return 0;
}
```

What will be the output of above code ?

- (1) 5, 10
- (2) 10, 5
- (3) 5, 5
- (4) 10, 10

Question Number : 58 Question Id : 5330723733 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Consider the function in C code :

```
Cal(a, b) {
    if (b != 1) {
        if (a != 1) {
            printf("*");
            Cal(a/2, b);
        }
        else {
            b = b - 1;
            Cal(10, b);
        }
    }
}
```

How many times * is going to be printed, if the function is called with Cal(10, 10); ?

- (1) 25
- (2) 23
- (3) 24
- (4) 27

Question Number : 58 Question Id : 5330723733 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Consider the function in C code :

```
Cal(a, b) {
    if (b != 1) {
        if (a != 1) {
            printf("*");
            Cal(a/2, b);
        }
        else {
            b = b - 1;
            Cal(10, b);
        }
    }
}
```

How many times * is going to be printed, if the function is called with Cal(10, 10); ?

- (1) 25
- (2) 23
- (3) 24
- (4) 27

Question Number : 59 Question Id : 5330723734 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

In Software configuration management, what is the primary purpose of version control ?

- (1) To control the changes made to software
- (2) To document user requirements
- (3) To estimate project cost
- (4) To design the software architecture

Question Number : 59 Question Id : 5330723734 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

In Software configuration management, what is the primary purpose of version control ?

- (1) To control the changes made to software
- (2) To document user requirements
- (3) To estimate project cost
- (4) To design the software architecture

Question Number : 60 Question Id : 5330723735 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

If a software project has 2000 lines of code (LOC) and the average productivity rate is 10 LOC per person-hour, how many person-hours are required to complete the project ?

- (1) 100
- (2) 150
- (3) 200
- (4) 250

Question Number : 60 Question Id : 5330723735 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

If a software project has 2000 lines of code (LOC) and the average productivity rate is 10 LOC per person-hour, how many person-hours are required to complete the project ?

- (1) 100
- (2) 150
- (3) 200
- (4) 250

**Question Number : 61 Question Id : 5330723736 Question Type : MCQ Option Shuffling : No
Correct Marks : 2 Wrong Marks : 0**

Given a project that uses the COCOMO model with an estimated effort of 2000 person-months and a productivity rate of 5 person-month per KLOC, what is the estimated size of the project in KLOC ?

- (1) 200
- (2) 400
- (3) 100
- (4) 50

**Question Number : 61 Question Id : 5330723736 Question Type : MCQ Option Shuffling : No
Correct Marks : 2 Wrong Marks : 0**

Given a project that uses the COCOMO model with an estimated effort of 2000 person-months and a productivity rate of 5 person-month per KLOC, what is the estimated size of the project in KLOC ?

- (1) 200
- (2) 400
- (3) 100
- (4) 50

**Question Number : 62 Question Id : 5330723737 Question Type : MCQ Option Shuffling : No
Correct Marks : 2 Wrong Marks : 0**

Given a project with an estimated effort of 1500 person-hours and a team of 5 people, how many days will it take to complete the project, if each person works 8 hours a day ?

- (1) 30
- (2) 37.5
- (3) 40
- (4) 45.5

**Question Number : 62 Question Id : 5330723737 Question Type : MCQ Option Shuffling : No
Correct Marks : 2 Wrong Marks : 0**

Given a project with an estimated effort of 1500 person-hours and a team of 5 people, how many days will it take to complete the project, if each person works 8 hours a day ?

- (1) 30
- (2) 37.5
- (3) 40
- (4) 45.5

Question Number : 63 Question Id : 5330723738 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Consider the three way hand shaking process followed during TCP connection establishment between two hosts A and B. Let S and R be two random 32-bit starting sequence numbers chosen by A and B, respectively. Suppose A sends a TCP segment having SYN bit = 1, SEQ number = S and ACK bit = 0 and B accepts the connection request.

Which one of the following choices represents the information present in the TCP segment header that is sent by B to A ?

- (1) SYN bit = 1, SEQ number = S + 1, ACK bit = 0, ACK number = R, FiN bit = 0
- (2) SYN bit = 0, SEQ number = R, ACK bit = 1, ACK number = S + 1, FiN bit = 0
- (3) SYN bit = 1, SEQ number = R, ACK bit = 1, ACK number = S + 1, FiN bit = 0
- (4) SYN bit = 1, SEQ number = R, ACK bit = 1, ACK number = S, FiN bit = 0

Question Number : 63 Question Id : 5330723738 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Consider the three way hand shaking process followed during TCP connection establishment between two hosts A and B. Let S and R be two random 32-bit starting sequence numbers chosen by A and B, respectively. Suppose A sends a TCP segment having SYN bit = 1, SEQ number = S and ACK bit = 0 and B accepts the connection request.

Which one of the following choices represents the information present in the TCP segment header that is sent by B to A ?

- (1) SYN bit = 1, SEQ number = S + 1, ACK bit = 0, ACK number = R, FiN bit = 0
- (2) SYN bit = 0, SEQ number = R, ACK bit = 1, ACK number = S + 1, FiN bit = 0
- (3) SYN bit = 1, SEQ number = R, ACK bit = 1, ACK number = S + 1, FiN bit = 0
- (4) SYN bit = 1, SEQ number = R, ACK bit = 1, ACK number = S, FiN bit = 0

Question Number : 64 Question Id : 5330723739 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Two computers A and B are configured as follows : A has IP address 203.197.2.53 and subnet mask 255.255.128.0, B has IP address 203.197.75.201 and subnet mask 255.255.192.0. What one of the following statement is true ?

- (1) A and B both assume they are on the same network
- (2) B assumes, A is on same network, A assumes B is on different network
- (3) A assumes, B is on same network, but B assumes, A is on a different network
- (4) A and B both assume they are on different network

Question Number : 64 Question Id : 5330723739 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Two computers A and B are configured as follows : A has IP address 203.197.2.53 and subnet mask 255.255.128.0, B has IP address 203.197.75.201 and subnet mask 255.255.192.0. What one of the following statement is true ?

- (1) A and B both assume they are on the same network
- (2) B assumes, A is on same network, A assumes B is on different network
- (3) A assumes, B is on same network, but B assumes, A is on a different network
- (4) A and B both assume they are on different network

Question Number : 65 Question Id : 5330723740 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

A class B network on the Internet has a subnet mask of 255.255.248.0, what is the maximum number of hosts per subnet ?

- (1) 1022
- (2) 1023
- (3) 2046
- (4) 2047

Question Number : 65 Question Id : 5330723740 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

A class B network on the Internet has a subnet mask of 255.255.248.0, what is the maximum number of hosts per subnet ?

- (1) 1022
- (2) 1023
- (3) 2046
- (4) 2047

Question Number : 66 Question Id : 5330723741 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

In a token ring network the transmission speed is 10^7 bps and the propagation speed is 200 m/ μ s. The 1-bit delay in this network is equivalent to _____.

- (1) 20 m
- (2) 30 m
- (3) 50 m
- (4) 40 m

Question Number : 66 Question Id : 5330723741 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

In a token ring network the transmission speed is 10^7 bps and the propagation speed is 200 m/ μ s. The 1-bit delay in this network is equivalent to _____.

- (1) 20 m
- (2) 30 m
- (3) 50 m
- (4) 40 m

Question Number : 67 Question Id : 5330723742 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Consider a CSMA/CD network that transmits data at the rate of 100 Mbps over a 1 Kilometre cable with no repeater. If the minimum frame size required for this network is 1250 bytes, what is the signal speed (km/sec) in the cable.

- (1) 8000
- (2) 16000
- (3) 12000
- (4) 20000

Question Number : 67 Question Id : 5330723742 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Consider a CSMA/CD network that transmits data at the rate of 100 Mbps over a 1 Kilometre cable with no repeater. If the minimum frame size required for this network is 1250 bytes, what is the signal speed (km/sec) in the cable.

- (1) 8000
- (2) 16000
- (3) 12000
- (4) 20000

Question Number : 68 Question Id : 5330723743 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Consider the following code :

```
#include<stdio.h>
void f1(char *x, char *y) {
    char *t1; t1 = x; x = y; y = t1;}
void f2(char **x, char **y) {
    char *t1; t1 = *x; *x = *y; *y = t1;}
int main()
{
    char *a = "ONE", *b = "TWO";
    f1(a, b); printf("%s %s", a, b);
    f2(&a, &b); printf("%s %s", a, b);
    return 0;
}
```

What will be the output of the above code?

- (1) ONE TWO TWO ONE
- (2) TWO ONE ONE TWO
- (3) ONE TWO ONE TWO
- (4) TWO ONE TWO ONE

Question Number : 68 Question Id : 5330723743 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Consider the following code :

```
#include<stdio.h>
void f1(char *x, char *y) {
    char *t1; t1 = x; x = y; y = t1;}
void f2(char **x, char **y) {
    char *t1; t1 = *x; *x = *y; *y = t1;}
int main()
{
    char *a = "ONE", *b = "TWO";
    f1(a, b); printf("%s %s", a, b);
    f2(&a, &b); printf("%s %s", a, b);
    return 0;
}
```

What will be the output of the above code?

- (1) ONE TWO TWO ONE
- (2) TWO ONE ONE TWO
- (3) ONE TWO ONE TWO
- (4) TWO ONE TWO ONE

Question Number : 69 Question Id : 5330723744 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Consider following C program :

```
#include<stdio.h>
int main()
{
    int x[] = {2, 4, 6, 8, 10};
    int a, b = 0, *y = x + 4;
    for(a = 0; a < 5; a++)
    {
        b = b + (*y - a) - *(y - a);
    }
    printf("%d\n", b);
    return 0;
}
```

What will be the output of the above C program ?

- (1) 4
- (2) 6
- (3) 8
- (4) 10

Question Number : 69 Question Id : 5330723744 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Consider following C program :

```
#include<stdio.h>
int main()
{
    int x[] = {2, 4, 6, 8, 10};
    int a, b=0, *y = x + 4;
    for(a=0; a<5; a++)
    {
        b = b + (*y - a) - *(y - a);
    }
    printf("%d\n", b);
    return 0;
}
```

What will be the output of the above C program ?

- (1) 4
- (2) 6
- (3) 8
- (4) 10

Question Number : 70 Question Id : 5330723745 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Which of the following is correct way to declare a functional pointer in C ?

- (1) int *func (int, int);
- (2) int (*func) (int, int);
- (3) int (func*) (int, int);
- (4) int *func* (int, int);

Question Number : 70 Question Id : 5330723745 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Which of the following is correct way to declare a functional pointer in C ?

- (1) int *func (int, int);
- (2) int (*func) (int, int);
- (3) int (func*) (int, int);
- (4) int *func* (int, int);

Question Number : 71 Question Id : 5330723746 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

What will be the output of the following C code?

```
#include<stdio.h>
void main()
{
    int arr[5] = {10, 20, 30, 40, 50};
    int *p = (int*) (&arr + 1);
    printf("%d%d", *(arr + 1), *(p - 1));
}
(1) 10 50
(2) 20 50
(3) 30 40
(4) 20 40
```

Question Number : 71 Question Id : 5330723746 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

What will be the output of the following C code?

```
#include<stdio.h>
void main()
{
    int arr[5] = {10, 20, 30, 40, 50};
    int *p = (int*) (&arr + 1);
    printf("%d%d", *(arr + 1), *(p - 1));
}
(1) 10 50
(2) 20 50
(3) 30 40
(4) 20 40
```

Question Number : 72 Question Id : 5330723747 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

What is the output of code given below :

```
#include<iostream.h>
using namespace std;
class Base {
public:
Base(){
    cout<<"Base Const";
}
virtual ~Base()
{
    cout<<"Base dest";
}
};
class derived : public Base {
public:
Derived() {
    cout<<"Derived Const";
}
~Derived() {
    cout<<"Derived dest";
}
};
int main()
{
    Base *b=new Derived();
    delete b;
    return 0;
}
```

- (1) Base Const Derived Const Derived dest Base dest
- (2) Base Const Derived Const Base dest Derived dest
- (3) Derived Const Base Const Base dest Derived dest
- (4) Base Const Derived Const Base dest

Question Number : 72 Question Id : 5330723747 Question Type : MCQ Option Shuffling : No
Correct Marks : 2 Wrong Marks : 0

What is the output of code given below :

```
#include<iostream.h>
using namespace std;
class Base {
public:
Base(){
    cout<<"Base Const";
}
virtual ~Base()
{
    cout<<"Base dest";
}
};
class derived : public Base {
public:
Derived() {
    cout<<"Derived Const";
}
~Derived() {
    cout<<"Derived dest";
}
};
int main()
{
    Base *b=new Derived();
    delete b;
    return 0;
}
```

- (1) Base Const Derived Const Derived dest Base dest
- (2) Base Const Derived Const Base dest Derived dest
- (3) Derived Const Base Const Base dest Derived dest
- (4) Base Const Derived Const Base dest

Question Number : 73 Question Id : 5330723748 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Which of the following C++ statements correctly declares an abstract class ?

- (1) class A { virtual void show()=0; };
- (2) class A { void show()=0; };
- (3) class A { void show() { } ; };
- (4) class A { show()=0; };

Question Number : 73 Question Id : 5330723748 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Which of the following C++ statements correctly declares an abstract class ?

- (1) class A { virtual void show() = 0; };
- (2) class A { void show() = 0; };
- (3) class A { void show() {} ; };
- (4) class A { show() = 0; };

Question Number : 74 Question Id : 5330723749 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Fifth normal form is concerned with :

- (1) Join Dependency
- (2) Domain-Key
- (3) Multivalued dependency
- (4) Functional dependency

Question Number : 74 Question Id : 5330723749 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Fifth normal form is concerned with :

- (1) Join Dependency
- (2) Domain-Key
- (3) Multivalued dependency
- (4) Functional dependency

Question Number : 75 Question Id : 5330723750 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

How does a relational database ensure data integrity ?

- (1) By encrypting all data stored
- (2) By enforcing rules defined in the schema
- (3) By compressing data for efficient storage
- (4) By allowing unrestricted access to all users

Question Number : 75 Question Id : 5330723750 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

How does a relational database ensure data integrity ?

- (1) By encrypting all data stored
- (2) By enforcing rules defined in the schema
- (3) By compressing data for efficient storage
- (4) By allowing unrestricted access to all users

Question Number : 76 Question Id : 5330723751 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

What is SQL primarily used for in the context of relational databases ?

- (1) To design user interfaces
- (2) To create and manipulate databases
- (3) To display data on web pages
- (4) To format printed reports

Question Number : 76 Question Id : 5330723751 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

What is SQL primarily used for in the context of relational databases ?

- (1) To design user interfaces
- (2) To create and manipulate databases
- (3) To display data on web pages
- (4) To format printed reports

Question Number : 77 Question Id : 5330723752 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Which of the following best describes the structure of a relational database ?

- (1) Data organized into tables with rows and columns
- (2) Data organized into files and folders
- (3) Data organized into a hierarchical tree structure
- (4) Data organized into a network of interconnected nodes

Question Number : 77 Question Id : 5330723752 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Which of the following best describes the structure of a relational database ?

- (1) Data organized into tables with rows and columns
- (2) Data organized into files and folders
- (3) Data organized into a hierarchical tree structure
- (4) Data organized into a network of interconnected nodes

Question Number : 78 Question Id : 5330723753 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Consider a schema $R(P,Q,R,S)$ and the following functional dependencies $P \rightarrow Q, Q \rightarrow R, R \rightarrow S, S \rightarrow Q$. Then decomposition of $R_1 (P,Q), R_2 (Q,R)$ and $R_3 (Q,S)$ is :

- (1) Dependency Preserving and lossless join
- (2) Lossless Join but not dependency preserving
- (3) Dependency preserving but not lossless Join
- (4) Not dependency preserving and not lossless join

Question Number : 78 Question Id : 5330723753 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Consider a schema $R(P,Q,R,S)$ and the following functional dependencies $P \rightarrow Q, Q \rightarrow R, R \rightarrow S, S \rightarrow Q$. Then decomposition of $R_1 (P,Q), R_2 (Q,R)$ and $R_3 (Q,S)$ is :

- (1) Dependency Preserving and lossless join
- (2) Lossless Join but not dependency preserving
- (3) Dependency preserving but not lossless Join
- (4) Not dependency preserving and not lossless join

Question Number : 79 Question Id : 5330723754 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Consider a relation schema $R = (U, V, W, X, Y, Z)$, on which the following functional dependencies hold :

$\{U \rightarrow V, VW \rightarrow X, Y \rightarrow W; X \rightarrow U\}$

The candidate keys of R are :

- (1) UY, VY
- (2) UY, VY, XY
- (3) UYZ, VYZ, VWZ
- (4) UYZ, VYZ, XYZ

Question Number : 79 Question Id : 5330723754 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Consider a relation schema $R = (U, V, W, X, Y, Z)$, on which the following functional dependencies hold :

$\{U \rightarrow V, VW \rightarrow X, Y \rightarrow W; X \rightarrow U\}$

The candidate keys of R are :

- (1) UY, VY
- (2) UY, VY, XY
- (3) UYZ, VYZ, VWZ
- (4) UYZ, VYZ, XYZ

Question Number : 80 Question Id : 5330723755 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Which of the following relations can not be decomposed in to BCNF with a lossless join and dependency-preserving decomposition ?

- (1) R (V, W, X, Y, Z) $\{VW \rightarrow X, WX \rightarrow V, VX \rightarrow W, W \rightarrow Y, Y \rightarrow Z\}$
- (2) R (V, W, X, Y) $\{VW \rightarrow W, X \rightarrow Y\}$
- (3) R (V, W, X, Y) $\{VW \rightarrow X, X \rightarrow VY\}$
- (4) R (V, W, X, Y, Z) $\{VW \rightarrow X, X \rightarrow Y, Y \rightarrow Z, Z \rightarrow V\}$

Question Number : 80 Question Id : 5330723755 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Which of the following relations can not be decomposed in to BCNF with a lossless join and dependency-preserving decomposition ?

- (1) R (V, W, X, Y, Z) $\{VW \rightarrow X, WX \rightarrow V, VX \rightarrow W, W \rightarrow Y, Y \rightarrow Z\}$
- (2) R (V, W, X, Y) $\{VW \rightarrow W, X \rightarrow Y\}$
- (3) R (V, W, X, Y) $\{VW \rightarrow X, X \rightarrow VY\}$
- (4) R (V, W, X, Y, Z) $\{VW \rightarrow X, X \rightarrow Y, Y \rightarrow Z, Z \rightarrow V\}$

Question Number : 81 Question Id : 5330723756 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

In a schema $R(A, B, C, D, E, F, G, H)$, each field of R contains only atomic values.

$F = \{CH \rightarrow G, A \rightarrow BC, B \rightarrow CFH, E \rightarrow A, F \rightarrow EG\}$ is a set of functional dependencies so that F^+ is exactly the set of FDs that holds R . The relation R is :

- (1) In 1NF, but not in 2NF
- (2) In 2NF, but not in 3NF
- (3) In 3NF, but not in BCNF
- (4) In BCNF

Question Number : 81 Question Id : 5330723756 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

In a schema $R(A, B, C, D, E, F, G, H)$, each field of R contains only atomic values.

$F = \{CH \rightarrow G, A \rightarrow BC, B \rightarrow CFH, E \rightarrow A, F \rightarrow EG\}$ is a set of functional dependencies so that F^+ is exactly the set of FDs that holds R . The relation R is :

- (1) In 1NF, but not in 2NF
- (2) In 2NF, but not in 3NF
- (3) In 3NF, but not in BCNF
- (4) In BCNF

Question Number : 82 Question Id : 5330723757 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Consider the transactions T_1, T_2, T_3 and the schedules S_1 and S_2 given below.

$T_1 : r_1(x); r_1(z); w_1(z)$

$T_2 : r_2(y); r_2(z); w_2(z)$

$T_3 : r_3(y); r_3(x); w_3(y)$

$S_1 : r_1(x); r_3(y); r_3(x); r_2(y); r_2(z); w_3(y); w_3(z);$
 $r_1(z); w_1(x); w_1(z)$

$S_2 : r_1(x); r_3(y); r_2(y); r_3(x); r_1(z); r_2(z); w_3(y);$
 $w_1(x); w_2(z); w_1(z)$

Which one of the following statements about the schedules is TRUE ?

- (1) Only S_1 is conflict-serializable
- (2) Only S_2 is conflict-serializable
- (3) Both S_1 and S_2 are conflict-serializable
- (4) Neither S_1 nor S_2 is conflict-serializable

Question Number : 82 Question Id : 5330723757 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Consider the transactions T_1, T_2, T_3 and the schedules S_1 and S_2 given below.

$T_1 : r_1(x); r_1(z); w_1(z)$

$T_2 : r_2(y); r_2(z); w_2(z)$

$T_3 : r_3(y); r_3(x); w_3(y)$

$S_1 : r_1(x); r_3(y); r_3(x); r_2(y); r_2(z); w_3(y); w_3(z);$
 $r_1(z); w_1(x); w_1(z)$

$S_2 : r_1(x); r_3(y); r_2(y); r_3(x); r_1(z); r_2(z); w_3(y);$
 $w_1(x); w_2(z); w_1(z)$

Which one of the following statements about the schedules is TRUE ?

- (1) Only S_1 is conflict-serializable
- (2) Only S_2 is conflict-serializable
- (3) Both S_1 and S_2 are conflict-serializable
- (4) Neither S_1 nor S_2 is conflict-serializable

Question Number : 83 Question Id : 5330723758 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Let $G(V, E)$ be an undirected graph with l edges. Then the sum of degree of all vertices is equal to

- (1) $2l$
- (2) $l/2$
- (3) l^2
- (4) \sqrt{l}

Question Number : 83 Question Id : 5330723758 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Let $G(V, E)$ be an undirected graph with l edges. Then the sum of degree of all vertices is equal to

- (1) $2l$
- (2) $l/2$
- (3) l^2
- (4) \sqrt{l}

Question Number : 84 Question Id : 5330723759 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

40 software professionals were interviewed for a job. 25 knew PYTHON 20 knew JAVA and 7 knew neither language. How many knew both languages ?

- (1) 20
- (2) 53
- (3) 10
- (4) 88

Question Number : 84 Question Id : 5330723759 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

40 software professionals were interviewed for a job. 25 knew PYTHON 20 knew JAVA and 7 knew neither language. How many knew both languages ?

- (1) 20
- (2) 53
- (3) 10
- (4) 88

Question Number : 85 Question Id : 5330723760 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Let P be "It is hot day" and q be "The temperature is 48°C". Write in simple sentences the meaning of $\sim p \wedge \sim q$.

- (1) It is hot day or temprature is 48°C
- (2) It is cold day or temprature is 48°C
- (3) It is neither a hot day nor temperature is 48°C
- (4) It is not a hot day

Question Number : 85 Question Id : 5330723760 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Let P be "It is hot day" and q be "The temperature is 48°C". Write in simple sentences the meaning of $\sim p \wedge \sim q$.

- (1) It is hot day or temprature is 48°C
- (2) It is cold day or temprature is 48°C
- (3) It is neither a hot day nor temperature is 48°C
- (4) It is not a hot day

Question Number : 86 Question Id : 5330723761 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Let L (x, y) be the statement "x loves y" where the domain for both x and y consists of all people in the world. Use quantifiers to express "Joy is loved by everyone".

- (1) $\forall x L(x, \text{Joy})$
- (2) $\forall y L(\text{Joy}, y)$
- (3) $\exists y \forall x L(x, y)$
- (4) $\exists x \neg L(\text{Joy}, x)$

Question Number : 86 Question Id : 5330723761 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Let L (x, y) be the statement "x loves y" where the domain for both x and y consists of all people in the world. Use quantifiers to express "Joy is loved by everyone".

- (1) $\forall x L(x, \text{Joy})$
- (2) $\forall y L(\text{Joy}, y)$
- (3) $\exists y \forall x L(x, y)$
- (4) $\exists x \neg L(\text{Joy}, x)$

Question Number : 87 Question Id : 5330723762 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Translate $\forall x \exists y (x < y)$ in English. Consider domain as a real number for both the variables.

- (1) For all real numbers x , there exists a real number y such that x is less than y
- (2) For every real numbers y , there exists a real number x such that x is less than y
- (3) For some real numbers x , there exists a real number y such that x is less than y
- (4) For each and every real numbers x and y , x is less than y

Question Number : 87 Question Id : 5330723762 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Translate $\forall x \exists y (x < y)$ in English. Consider domain as a real number for both the variables.

- (1) For all real numbers x , there exists a real number y such that x is less than y
- (2) For every real numbers y , there exists a real number x such that x is less than y
- (3) For some real numbers x , there exists a real number y such that x is less than y
- (4) For each and every real numbers x and y , x is less than y

Question Number : 88 Question Id : 5330723763 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

A multi processor system with 16 processors is used to execute a parallelizable task. If the serial portion of the task takes 200 clock cycles and the parallel portion take 800 clock cycles. When all 16 processor are used how many total clock cycles are required to complete the task ?

- (1) 250
- (2) 300
- (3) 400
- (4) 450

Question Number : 88 Question Id : 5330723763 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

A multi processor system with 16 processors is used to execute a parallelizable task. If the serial portion of the task takes 200 clock cycles and the parallel portion take 800 clock cycles. When all 16 processor are used how many total clock cycles are required to complete the task ?

- (1) 250
- (2) 300
- (3) 400
- (4) 450

Question Number : 89 Question Id : 5330723764 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

A CPU has a 5-stage pipeline with the following stages Fetch (F), Decode (D), Execute (E), Memory (M) and Write-back (W). Each stage takes one clock cycle to complete. Assume there are no pipeline stalls and the pipeline is initially empty. How many clock cycles are required to complete the execution of 10 instructions ?

- (1) 10
- (2) 14
- (3) 15
- (4) 19

Question Number : 89 Question Id : 5330723764 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

A CPU has a 5-stage pipeline with the following stages Fetch (F), Decode (D), Execute (E), Memory (M) and Write-back (W). Each stage takes one clock cycle to complete. Assume there are no pipeline stalls and the pipeline is initially empty. How many clock cycles are required to complete the execution of 10 instructions ?

- (1) 10
- (2) 14
- (3) 15
- (4) 19

Question Number : 90 Question Id : 5330723765 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

A vector processor with 16 lanes can perform an operation on 1024 elements with each operation taking 5 clock cycles. How many cycles are needed to complete the operation ?

- (1) 64
- (2) 80
- (3) 100
- (4) 128

Question Number : 90 Question Id : 5330723765 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

A vector processor with 16 lanes can perform an operation on 1024 elements with each operation taking 5 clock cycles. How many cycles are needed to complete the operation ?

- (1) 64
- (2) 80
- (3) 100
- (4) 128

Question Number : 91 Question Id : 5330723766 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Arrange the following phases of database design in the correct order :

- (A) Physical Design
- (B) Conceptual Design
- (C) Logical Design
- (D) Requirement Analysis

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

- (1) (B), (D), (A), (C)
- (2) (C), (A), (B), (D)
- (3) (D), (B), (C), (A)
- (4) (A), (D), (C), (B)

Question Number : 91 Question Id : 5330723766 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Arrange the following phases of database design in the correct order :

- (A) Physical Design
- (B) Conceptual Design
- (C) Logical Design
- (D) Requirement Analysis

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

- (1) (B), (D), (A), (C)
- (2) (C), (A), (B), (D)
- (3) (D), (B), (C), (A)
- (4) (A), (D), (C), (B)

Question Number : 92 Question Id : 5330723767 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Out the following steps in the proper sequence for simplifying a Boolean function using a Karnaugh map (K-map).

- (A) Identify and group the largest possible cluster of 1's
- (B) Draw the K-map for the given Boolean function
- (C) Write the simplified Boolean expression from the grouped clusters
- (D) Transfer the truth table values to the K-map

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

- (1) (B), (D), (A), (C)
- (2) (D), (B), (A), (C)
- (3) (B), (A), (D), (C)
- (4) (A), (B), (C), (D)

Question Number : 92 Question Id : 5330723767 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Out the following steps in the proper sequence for simplifying a Boolean function using a Karnaugh map (K-map).

- (A) Identify and group the largest possible cluster of 1's
- (B) Draw the K-map for the given Boolean function
- (C) Write the simplified Boolean expression from the grouped clusters
- (D) Transfer the truth table values to the K-map

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

- (1) (B), (D), (A), (C)
- (2) (D), (B), (A), (C)
- (3) (B), (A), (D), (C)
- (4) (A), (B), (C), (D)

Question Number : 93 Question Id : 5330723768 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Arrange the given steps required for a Direct Memory Access (DMA) transfer in the correct order.

- (A) Initiate DMA transfer request
- (B) Transfer data directly between peripheral and memory
- (C) Processor grants DMA control over the system bus
- (D) DMA controller completes data transfer and signals completion

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

- (1) (C), (A), (B), (D)
- (2) (A), (C), (B), (D)
- (3) (A), (B), (C), (D)
- (4) (C), (B), (A), (D)

Question Number : 93 Question Id : 5330723768 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Arrange the given steps required for a Direct Memory Access (DMA) transfer in the correct order.

- (A) Initiate DMA transfer request
- (B) Transfer data directly between peripheral and memory
- (C) Processor grants DMA control over the system bus
- (D) DMA controller completes data transfer and signals completion

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

- (1) (C), (A), (B), (D)
- (2) (A), (C), (B), (D)
- (3) (A), (B), (C), (D)
- (4) (C), (B), (A), (D)

Question Number : 94 Question Id : 5330723769 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Arrange the following steps of file handling in C in the correct order :

- (A) Close the file
- (B) Read from or write to the file
- (C) Open the file
- (D) Check for error

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

- (1) (A), (C), (D), (B)
- (2) (D), (B), (C), (A)
- (3) (C), (D), (B), (A)
- (4) (B), (D), (A), (C)

Question Number : 94 Question Id : 5330723769 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Arrange the following steps of file handling in C in the correct order :

- (A) Close the file
- (B) Read from or write to the file
- (C) Open the file
- (D) Check for error

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

- (1) (A), (C), (D), (B)
- (2) (D), (B), (C), (A)
- (3) (C), (D), (B), (A)
- (4) (B), (D), (A), (C)

Question Number : 95 Question Id : 5330723770 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Find the correct sequence of the storage device in ascending order based on their access time.

- (A) Registers
- (B) Magnetic Disk
- (C) Magnetic Tapes
- (D) Main memory
- (E) Optical Disk

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

- (1) (B), (A), (D), (C), (E)
- (2) (B), (A), (E), (D), (C)
- (3) (C), (B), (A), (E), (D)
- (4) (C), (E), (B), (D), (A)

Question Number : 95 Question Id : 5330723770 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Find the correct sequence of the storage device in ascending order based on their access time.

- (A) Registers
- (B) Magnetic Disk
- (C) Magnetic Tapes
- (D) Main memory
- (E) Optical Disk

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

- (1) (B), (A), (D), (C), (E)
- (2) (B), (A), (E), (D), (C)
- (3) (C), (B), (A), (E), (D)
- (4) (C), (E), (B), (D), (A)

Question Number : 96 Question Id : 5330723771 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Arrange the following phases of the Agile process in the correct sequence :

- (A) Design
- (B) Release
- (C) Testing
- (D) Development
- (E) Planning

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

- (1) (A), (B), (D), (E), (C)
- (2) (A), (D), (E), (B), (C)
- (3) (E), (A), (D), (C), (B)
- (4) (E), (D), (A), (C), (B)

Question Number : 96 Question Id : 5330723771 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Arrange the following phases of the Agile process in the correct sequence :

- (A) Design
- (B) Release
- (C) Testing
- (D) Development
- (E) Planning

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

- (1) (A), (B), (D), (E), (C)
- (2) (A), (D), (E), (B), (C)
- (3) (E), (A), (D), (C), (B)
- (4) (E), (D), (A), (C), (B)

Question Number : 97 Question Id : 5330723772 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Arrange the following steps of Feature Drive Development (FDD) process in the correct sequence :

- (A) Develop an overall model
- (B) Build by feature
- (C) Plan by feature
- (D) Design by feature
- (E) Build a feature list

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

- (1) (A), (C), (B), (E), (D)
- (2) (A), (E), (C), (D), (B)
- (3) (B), (A), (D), (E), (C)
- (4) (A), (B), (C), (E), (D)

Question Number : 97 Question Id : 5330723772 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Arrange the following steps of Feature Drive Development (FDD) process in the correct sequence :

- (A) Develop an overall model
- (B) Build by feature
- (C) Plan by feature
- (D) Design by feature
- (E) Build a feature list

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

- (1) (A), (C), (B), (E), (D)
- (2) (A), (E), (C), (D), (B)
- (3) (B), (A), (D), (E), (C)
- (4) (A), (B), (C), (E), (D)

Question Number : 98 Question Id : 5330723773 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Arrange the following steps in the correct order to solve the Knapsack problem using Dynamic Programming.

- (A) Define the base case when the capacity is zero (0) or no items are left to consider
- (B) Compute the maximum value that can be obtained using items up to the i-th item and a knapsack capacity of 0
- (C) Identify subproblems and their dependencies based on items weights and values
- (D) Initialize a table to store results of subproblems
- (E) Iterate through each item and each possible Capacity to fill the table

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

- (1) (C), (D), (A), (E), (B)
- (2) (D), (C), (A), (E), (B)
- (3) (A), (C), (D), (E), (B)
- (4) (D), (A), (C), (E), (B)

Question Number : 98 Question Id : 5330723773 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Arrange the following steps in the correct order to solve the Knapsack problem using Dynamic Programming.

- (A) Define the base case when the capacity is zero (0) or no items are left to consider
- (B) Compute the maximum value that can be obtained using items up to the i-th item and a knapsack capacity of 0
- (C) Identify subproblems and their dependencies based on items weights and values
- (D) Initialize a table to store results of subproblems
- (E) Iterate through each item and each possible Capacity to fill the table

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

- (1) (C), (D), (A), (E), (B)
- (2) (D), (C), (A), (E), (B)
- (3) (A), (C), (D), (E), (B)
- (4) (D), (A), (C), (E), (B)

Question Number : 99 Question Id : 5330723774 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Arrange the following recurrence relations in increasing order of their time capacity.

- (A) $T(n) = T(n/2) + 1$
- (B) $T(n) = 2T(n/2) + n$
- (C) $T(n) = 3T(n/3) + n$
- (D) $T(n) = 2T(n/2) + \sqrt{n}$
- (E) $T(n) = T(n-1) + 1$

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

- (1) (E), (A), (B), (D), (C)
- (2) (A), (E), (D), (B), (C)
- (3) (E), (A), (D), (B), (C)
- (4) (A), (B), (D), (E), (C)

Question Number : 99 Question Id : 5330723774 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Arrange the following recurrence relations in increasing order of their time capacity.

- (A) $T(n) = T(n/2) + 1$
- (B) $T(n) = 2T(n/2) + n$
- (C) $T(n) = 3T(n/3) + n$
- (D) $T(n) = 2T(n/2) + \sqrt{n}$
- (E) $T(n) = T(n-1) + 1$

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

- (1) (E), (A), (B), (D), (C)
- (2) (A), (E), (D), (B), (C)
- (3) (E), (A), (D), (B), (C)
- (4) (A), (B), (D), (E), (C)

Question Number : 100 Question Id : 5330723775 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Arrange the following stages of a Turing Machine (TM) operation in the correct order as they occur during computation.

- (A) Writing a symbol on the tape
- (B) Moving the tape head left to right
- (C) Reading a symbol from the tape
- (D) Transitioning to a new state based on the current state and symbol read
- (E) Halting and accepting or rejecting the input

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

- (1) (C), (A), (B), (D), (E)
- (2) (C), (B), (A), (D), (E)
- (3) (C), (D), (A), (B), (E)
- (4) (C), (D), (B), (A), (E)

Question Number : 100 Question Id : 5330723775 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Arrange the following stages of a Turing Machine (TM) operation in the correct order as they occur during computation.

- (A) Writing a symbol on the tape
- (B) Moving the tape head left to right
- (C) Reading a symbol from the tape
- (D) Transitioning to a new state based on the current state and symbol read
- (E) Halting and accepting or rejecting the input

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

- (1) (C), (A), (B), (D), (E)
- (2) (C), (B), (A), (D), (E)
- (3) (C), (D), (A), (B), (E)
- (4) (C), (D), (B), (A), (E)

Question Number : 101 Question Id : 5330723776 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Arrange the following stages of parsing in the correct order as they typically occur in the compilation process.

- (A) Lexical Analysis
- (B) Semantic Analysis
- (C) Syntax Analysis
- (D) Intermediate Code Generation
- (E) Code Optimization

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

- (1) (A), (B), (C), (D), (E)
- (2) (A), (C), (B), (D), (E)
- (3) (A), (D), (B), (C), (E)
- (4) (A), (C), (D), (B), (E)

Question Number : 101 Question Id : 5330723776 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Arrange the following stages of parsing in the correct order as they typically occur in the compilation process.

- (A) Lexical Analysis
- (B) Semantic Analysis
- (C) Syntax Analysis
- (D) Intermediate Code Generation
- (E) Code Optimization

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

- (1) (A), (B), (C), (D), (E)
- (2) (A), (C), (B), (D), (E)
- (3) (A), (D), (B), (C), (E)
- (4) (A), (C), (D), (B), (E)

Question Number : 102 Question Id : 5330723777 Question Type : MCQ Option Shuffling : No
Correct Marks : 2 Wrong Marks : 0

Arrange the following Language Classes in ascending order according to their expressive power, as defined by Chomsky hierarchy :

- (A) Context-free languages
- (B) Context-sensitive languages
- (C) Regular languages
- (D) Unrestricted Grammars

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

- (1) (C), (A), (B), (D)
- (2) (C), (A), (D), (B)
- (3) (A), (C), (B), (D)
- (4) (A), (D), (B), (C)

Question Number : 102 Question Id : 5330723777 Question Type : MCQ Option Shuffling : No
Correct Marks : 2 Wrong Marks : 0

Arrange the following Language Classes in ascending order according to their expressive power, as defined by Chomsky hierarchy :

- (A) Context-free languages
- (B) Context-sensitive languages
- (C) Regular languages
- (D) Unrestricted Grammars

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

- (1) (C), (A), (B), (D)
- (2) (C), (A), (D), (B)
- (3) (A), (C), (B), (D)
- (4) (A), (D), (B), (C)

Question Number : 103 Question Id : 5330723778 Question Type : MCQ Option Shuffling : No
Correct Marks : 2 Wrong Marks : 0

Arrange the following steps in a proper sequence for the typical process of a DNS query :

- (A) Query authoritative DNS Server
- (B) Query local DNS Server
- (C) Local DNS Server Check Cache
- (D) Query root DNS Server
- (E) Query TLD DNS Server

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

- (1) (A), (C), (E), (B), (D)
- (2) (E), (A), (C), (B), (D)
- (3) (A), (B), (C), (D), (E)
- (4) (B), (C), (D), (E), (A)

Question Number : 103 Question Id : 5330723778 Question Type : MCQ Option Shuffling : No
Correct Marks : 2 Wrong Marks : 0

Arrange the following steps in a proper sequence for the typical process of a DNS query :

- (A) Query authoritative DNS Server
- (B) Query local DNS Server
- (C) Local DNS Server Check Cache
- (D) Query root DNS Server
- (E) Query TLD DNS Server

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

- (1) (A), (C), (E), (B), (D)
- (2) (E), (A), (C), (B), (D)
- (3) (A), (B), (C), (D), (E)
- (4) (B), (C), (D), (E), (A)

Question Number : 104 Question Id : 5330723779 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Arrange the following steps in a proper sequence for the process of training a neural network.

- (A) Weight initialization
- (B) Feed forward
- (C) Back Propagation
- (D) Loss Calculation
- (E) Weight Update

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

- (1) (A), (B), (D), (C), (E)
- (2) (D), (B), (A), (C), (E)
- (3) (A), (C), (D), (B), (E)
- (4) (E), (C), (B), (D), (A)

Question Number : 104 Question Id : 5330723779 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Arrange the following steps in a proper sequence for the process of training a neural network.

- (A) Weight initialization
- (B) Feed forward
- (C) Back Propagation
- (D) Loss Calculation
- (E) Weight Update

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

- (1) (A), (B), (D), (C), (E)
- (2) (D), (B), (A), (C), (E)
- (3) (A), (C), (D), (B), (E)
- (4) (E), (C), (B), (D), (A)

Question Number : 105 Question Id : 5330723780 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Arrange the following steps in proper sequence involved in a Genetic Algorithm :

- (A) Selection
- (B) Initialization
- (C) Crossover
- (D) Mutation
- (E) Evaluation

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

- (1) (A), (B), (C), (D), (E)
- (2) (E), (A), (B), (D), (C)
- (3) (B), (E), (A), (C), (D)
- (4) (A), (C), (B), (D), (E)

Question Number : 105 Question Id : 5330723780 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Arrange the following steps in proper sequence involved in a Genetic Algorithm :

- (A) Selection
- (B) Initialization
- (C) Crossover
- (D) Mutation
- (E) Evaluation

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

- (1) (A), (B), (C), (D), (E)
- (2) (E), (A), (B), (D), (C)
- (3) (B), (E), (A), (C), (D)
- (4) (A), (C), (B), (D), (E)

Question Number : 106 Question Id : 5330723781 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Which of the following are context free language ?

- (A) $\{w^i x^j y^k z^l \mid i+k=j+l, \text{ where } i, j, k, l \geq 0\}$
- (B) $\{w^i x^j y^k z^l \mid i=j \text{ and } k=l, \text{ where } i, j, k, l \geq 0\}$
- (C) $\{w^i x^j y^k z^l \mid i=j=k \text{ and } k \neq l, \text{ where } i, j, k, l \geq 0\}$
- (D) $\{w^i x^j y^k z^l \mid i=j=k+l, \text{ where } i, j, k, l \geq 0\}$
- (E) $\{w^i x^j y^k z^l \mid i=j=l \text{ and } k \neq l, \text{ where } i, j, k, l \geq 0\}$

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

- (1) (A), (B) Only
- (2) (B), (C) Only
- (3) (C), (D) Only
- (4) (D), (E) Only

Question Number : 106 Question Id : 5330723781 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Which of the following are context free language ?

- (A) $\{w^i x^j y^k z^l \mid i+k=j+l, \text{ where } i, j, k, l \geq 0\}$
 (B) $\{w^i x^j y^k z^l \mid i=j \text{ and } k=l, \text{ where } i, j, k, l \geq 0\}$
 (C) $\{w^i x^j y^k z^l \mid i=j=k \text{ and } k \neq l, \text{ where } i, j, k, l \geq 0\}$
 (D) $\{w^i x^j y^k z^l \mid i=j=k+l, \text{ where } i, j, k, l \geq 0\}$
 (E) $\{w^i x^j y^k z^l \mid i=j=l \text{ and } k \neq l, \text{ where } i, j, k, l \geq 0\}$

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

- (1) (A), (B) Only
 (2) (B), (C) Only
 (3) (C), (D) Only
 (4) (D), (E) Only

Question Number : 107 Question Id : 5330723782 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

A coin is tossed successively three times. Find the Probability (P), Event (E), Sample space (S) of getting exactly one head or two heads, where n is number of occurrence.

(A) $n(S) = 8$ and $n(E) = 4$

(B) $n(E) = 6$ and $n(S) = 8$

(C) $P(E) = \frac{3}{4}$

(D) $P(E) = \frac{1}{2}$

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

- (1) (A), (B), (C) and (D)
 (2) (B) and (C) Only
 (3) (A) and (D) Only
 (4) (C) and (D) Only

Question Number : 107 Question Id : 5330723782 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

A coin is tossed successively three times. Find the Probability (P), Event (E), Sample space (S) of getting exactly one head or two heads, where n is number of occurrence.

(A) $n(S) = 8$ and $n(E) = 4$

(B) $n(E) = 6$ and $n(S) = 8$

(C) $P(E) = \frac{3}{4}$

(D) $P(E) = \frac{1}{2}$

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

- (1) (A), (B), (C) and (D)
- (2) (B) and (C) Only
- (3) (A) and (D) Only
- (4) (C) and (D) Only

Question Number : 108 Question Id : 5330723783 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Consider the given number $(45)_y$ where y is the base of the number. Some of the possible values of y are given below.

- (A) 5
- (B) 6
- (C) 7
- (D) 8

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

- (1) (A), (B) and (C) Only
- (2) (B), (C) and (D) Only
- (3) (A), (C) and (D) Only
- (4) (A), (B), (C) and (D)

Question Number : 108 Question Id : 5330723783 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Consider the given number $(45)_y$ where y is the base of the number. Some of the possible values of y are given below.

- (A) 5
- (B) 6
- (C) 7
- (D) 8

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

- (1) (A), (B) and (C) Only
- (2) (B), (C) and (D) Only
- (3) (A), (C) and (D) Only
- (4) (A), (B), (C) and (D)

Question Number : 109 Question Id : 5330723784 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Consider the following statement regarding special purpose registers.

- (A) Program Counter (PC) keeps the track of next instruction executed
- (B) Instruction register holds the address of first instruction to be executed
- (C) Accumulator holds the output of ALU
- (D) Program Counter (PC) keeps the track of only first instruction of the program

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

- (1) (A) and (C) Only
- (2) (A) and (D) Only
- (3) (B) and (D) Only
- (4) (A), (B) and (C) Only

Question Number : 109 Question Id : 5330723784 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Consider the following statement regarding special purpose registers.

- (A) Program Counter (PC) keeps the track of next instruction executed
- (B) Instruction register holds the address of first instruction to be executed
- (C) Accumulator holds the output of ALU
- (D) Program Counter (PC) keeps the track of only first instruction of the program

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

- (1) (A) and (C) Only
- (2) (A) and (D) Only
- (3) (B) and (D) Only
- (4) (A), (B) and (C) Only

Question Number : 110 Question Id : 5330723785 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Which of the following statements are TRUE about Process Control Block (PCB) ?

- (A) The PCB contains information about the process state, such as whether it is running, waiting or terminated
- (B) The PCB includes the program code and data segments of the process
- (C) The PCB stores the process's memory management information, such as page tables and segment tables
- (D) The PCB is used to track process scheduling information and CPU registers for process execution

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

- (1) (A), (B) and (C) Only
- (2) (B), (C) and (D) Only
- (3) (A), (C) and (D) Only
- (4) (A) and (B) Only

Question Number : 110 Question Id : 5330723785 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Which of the following statements are TRUE about Process Control Block (PCB) ?

- (A) The PCB contains information about the process state, such as whether it is running, waiting or terminated
- (B) The PCB includes the program code and data segments of the process
- (C) The PCB stores the process's memory management information, such as page tables and segment tables
- (D) The PCB is used to track process scheduling information and CPU registers for process execution

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

- (1) (A), (B) and (C) Only
- (2) (B), (C) and (D) Only
- (3) (A), (C) and (D) Only
- (4) (A) and (B) Only

Question Number : 111 Question Id : 5330723786 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Which of the following statements are TRUE about Privileged Instructions ?

- (A) It can only be executed by the Operating System kernel and not by user applications.
- (B) It is designed to perform operations that can directly affect the hardware or system state such as I/O operations or changing memory management setting.
- (C) User applications can execute privileged instructions if they have to correct permissions, set by the Operating System.
- (D) It usually executed in user mode to ensure the safety and security of the system.

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

- (1) (A) and (B) Only
- (2) (A), (B) and (C) Only
- (3) (B) and (C) Only
- (4) (B), (C) and (D) Only

Question Number : 111 Question Id : 5330723786 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Which of the following statements are TRUE about Privileged Instructions ?

- (A) It can only be executed by the Operating System kernel and not by user applications.
- (B) It is designed to perform operations that can directly affect the hardware or system state such as I/O operations or changing memory management setting.
- (C) User applications can execute privileged instructions if they have to correct permissions, set by the Operating System.
- (D) It usually executed in user mode to ensure the safety and security of the system.

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

- (1) (A) and (B) Only
- (2) (A), (B) and (C) Only
- (3) (B) and (C) Only
- (4) (B), (C) and (D) Only

Question Number : 112 Question Id : 5330723787 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Which of the following statements are TRUE about mutual exclusion in concurrent programming ?

- (A) Mutual exclusion ensures that only one process can be in a critical section at any given time.
- (B) Mutual exclusion are designed to prevent conflicts and ensure that only one process can access shared resources at a time.
- (C) Mutual exclusion can use various algorithms to ensure that processes do not enter the critical section simultaneously.
- (D) Mutual exclusion allows multiple processes to access the critical section simultaneously to improve performance.

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

- (1) (A), (B), (C) Only
- (2) (B), (C), (D) Only
- (3) (B), (D), (A) Only
- (4) (A), (C), (D) Only

Question Number : 112 Question Id : 5330723787 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Which of the following statements are TRUE about mutual exclusion in concurrent programming ?

- (A) Mutual exclusion ensures that only one process can be in a critical section at any given time.
- (B) Mutual exclusion are designed to prevent conflicts and ensure that only one process can access shared resources at a time.
- (C) Mutual exclusion can use various algorithms to ensure that processes do not enter the critical section simultaneously.
- (D) Mutual exclusion allows multiple processes to access the critical section simultaneously to improve performance.

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

- (1) (A), (B), (C) Only
- (2) (B), (C), (D) Only
- (3) (B), (D), (A) Only
- (4) (A), (C), (D) Only

Question Number : 113 Question Id : 5330723788 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Which of the following languages can be recognized by Non-Deterministic Finite Automata (NFA) but cannot be recognized by Deterministic Finite Automata (DFA) ?

- (A) $L_1 = \{w \in \{0, 1\}^* \mid \text{the length of } w \text{ is even}\}$
- (B) $L_2 = \{w \in \{0, 1\}^* \mid \text{the length of } w \text{ is odd}\}$
- (C) $L_3 = \{w \in \{0, 1\}^* \mid \text{all } 0\text{'s come before all } 1\text{'s in } w\}$
- (D) $L_4 = \{w \in \{0, 1\}^* \mid w \text{ contains an equal number of } 0\text{'s and } 1\text{'s}\}$
- (E) $L_5 = \{w \in \{0, 1\}^* \mid \text{all } 1\text{'s come before all } 0\text{'s in } w\}$

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

- (1) (A) and (B) Only
- (2) (B) and (C) Only
- (3) (C) and (D) Only
- (4) (D) and (E) Only

Question Number : 113 Question Id : 5330723788 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Which of the following languages can be recognized by Non-Deterministic Finite Automata (NFA) but cannot be recognized by Deterministic Finite Automata (DFA) ?

- (A) $L_1 = \{w \in \{0, 1\}^* \mid \text{the length of } w \text{ is even}\}$
- (B) $L_2 = \{w \in \{0, 1\}^* \mid \text{the length of } w \text{ is odd}\}$
- (C) $L_3 = \{w \in \{0, 1\}^* \mid \text{all } 0\text{'s come before all } 1\text{'s in } w\}$
- (D) $L_4 = \{w \in \{0, 1\}^* \mid w \text{ contains an equal number of } 0\text{'s and } 1\text{'s}\}$
- (E) $L_5 = \{w \in \{0, 1\}^* \mid \text{all } 1\text{'s come before all } 0\text{'s in } w\}$

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

- (1) (A) and (B) Only
- (2) (B) and (C) Only
- (3) (C) and (D) Only
- (4) (D) and (E) Only

Question Number : 114 Question Id : 5330723789 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

- (A) In IPv4 addressing, a block of address can be define as x.y.z.t/n in which x.y.z.t define one of the address and /n define the mask
- (B) The first address in the block can be found by setting the rightmost 32-n bits to 0s
- (C) Address of class C is used for multicast communication
- (D) There are five classes in IPv4 address
- (E) Supernetting combine several networks into one large network

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

- (1) (A), (B) and (C) Only
- (2) (A), (B), (D) and (E) Only
- (3) (A), (C), (D) and (E) Only
- (4) (C), (D) and (E) Only

Question Number : 114 Question Id : 5330723789 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

- (A) In IPv4 addressing, a block of address can be define as x.y.z.t/n in which x.y.z.t define one of the address and /n define the mask
- (B) The first address in the block can be found by setting the rightmost 32-n bits to 0s
- (C) Address of class C is used for multicast communication
- (D) There are five classes in IPv4 address
- (E) Supernetting combine several networks into one large network

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

- (1) (A), (B) and (C) Only
- (2) (A), (B), (D) and (E) Only
- (3) (A), (C), (D) and (E) Only
- (4) (C), (D) and (E) Only

Question Number : 115 Question Id : 5330723790 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Host A (on TCP/IPv4 Networks) send an IP Datagram D to host B (also on TCP/IPv4 network). Assume that no error occurred during transmission of D, when D reaches B. Which of following header field may differ from that of original datagram D ?

- (A) TTL
- (B) Checksum
- (C) Fragment offset
- (D) Source IP
- (E) Destination IP

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

- (1) (A) and (B) Only
- (2) (A), (B) and (C) Only
- (3) (A), (B), (C) and (D) Only
- (4) (A), (B), (C) and (E) Only

Question Number : 115 Question Id : 5330723790 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Host A (on TCP/IPv4 Networks) send an IP Datagram D to host B (also on TCP/IPv4 network). Assume that no error occurred during transmission of D, when D reaches B. Which of following header field may differ from that of original datagram D ?

- (A) TTL
- (B) Checksum
- (C) Fragment offset
- (D) Source IP
- (E) Destination IP

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

- (1) (A) and (B) Only
- (2) (A), (B) and (C) Only
- (3) (A), (B), (C) and (D) Only
- (4) (A), (B), (C) and (E) Only

Question Number : 116 Question Id : 5330723791 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Which of the following properties correctly describe a Regular Grammar ?

- (A) All production rules are of the form $A \rightarrow xB$ or $A \rightarrow x$, where A and B are non terminal symbols and x is a terminal symbol.
- (B) Regular grammars are more powerful than context-free grammars and can express any type of language.
- (C) There is a direct correspondence between regular grammar and finite automata.
- (D) Regular grammars can generate languages that are not recognised by any type of automata.

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

- (1) (A) and (B) Only
- (2) (B) and (C) Only
- (3) (C) and (D) Only
- (4) (A) and (C) Only

Question Number : 116 Question Id : 5330723791 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Which of the following properties correctly describe a Regular Grammar ?

- (A) All production rules are of the form $A \rightarrow xB$ or $A \rightarrow x$, where A and B are non terminal symbols and x is a terminal symbol.
- (B) Regular grammars are more powerful than context-free grammars and can express any type of language.
- (C) There is a direct correspondence between regular grammar and finite automata.
- (D) Regular grammars can generate languages that are not recognised by any type of automata.

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

- (1) (A) and (B) Only
- (2) (B) and (C) Only
- (3) (C) and (D) Only
- (4) (A) and (C) Only

Question Number : 117 Question Id : 5330723792 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Which of the following tasks could be attained using syntax trees in compiler design ?

- (A) Type Checking
- (B) Code Generation
- (C) Code Optimization
- (D) Error Handling

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

- (1) (A), (B), (C) Only
- (2) (B), (C), (D) Only
- (3) (A), (C), (D) Only
- (4) (A), (B), (D) Only

Question Number : 117 Question Id : 5330723792 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Which of the following tasks could be attained using syntax trees in compiler design ?

- (A) Type Checking
- (B) Code Generation
- (C) Code Optimization
- (D) Error Handling

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

- (1) (A), (B), (C) Only
- (2) (B), (C), (D) Only
- (3) (A), (C), (D) Only
- (4) (A), (B), (D) Only

Question Number : 118 Question Id : 5330723793 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Select the Sorting Algorithms that are stable.

- (A) Quick Sort
- (B) Bubble Sort
- (C) Insertion Sort
- (D) Merge Sort
- (E) Shell Sort

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

- (1) (A), (B), (C) and (E) Only
- (2) (A), (D) and (E) Only
- (3) (B) and (C) Only
- (4) (B), (C) and (E) Only

Question Number : 118 Question Id : 5330723793 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Select the Sorting Algorithms that are stable.

- (A) Quick Sort
- (B) Bubble Sort
- (C) Insertion Sort
- (D) Merge Sort
- (E) Shell Sort

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

- (1) (A), (B), (C) and (E) Only
- (2) (A), (D) and (E) Only
- (3) (B) and (C) Only
- (4) (B), (C) and (E) Only

Question Number : 119 Question Id : 5330723794 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Which of the following are typical activities in the software process lifecycle ?

- (A) Requirement Analysis
- (B) System Design
- (C) Code Refactoring
- (D) Deployment
- (E) Substructure

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

- (1) (A), (B), (C) Only
- (2) (B), (C), (D) Only
- (3) (A), (B), (D) Only
- (4) (A), (D), (E) Only

Question Number : 119 Question Id : 5330723794 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Which of the following are typical activities in the software process lifecycle ?

- (A) Requirement Analysis
- (B) System Design
- (C) Code Refactoring
- (D) Deployment
- (E) Substructure

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

- (1) (A), (B), (C) Only
- (2) (B), (C), (D) Only
- (3) (A), (B), (D) Only
- (4) (A), (D), (E) Only

Question Number : 120 Question Id : 5330723795 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Which of the following are Agile Process Models ?

- (A) Extreme Programming (XP)
- (B) Waterfall
- (C) Scrum
- (D) Spiral
- (E) Incremental

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

- (1) (A) and (C) Only
- (2) (B) and (C) Only
- (3) (A) and (D) Only
- (4) (B) and (E) Only

Question Number : 120 Question Id : 5330723795 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Which of the following are Agile Process Models ?

- (A) Extreme Programming (XP)
- (B) Waterfall
- (C) Scrum
- (D) Spiral
- (E) Incremental

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

- (1) (A) and (C) Only
- (2) (B) and (C) Only
- (3) (A) and (D) Only
- (4) (B) and (E) Only

Question Number : 121 Question Id : 5330723796 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Which of the following statements about pointers in C are TRUE.

- (A) Pointers can be used to access array elements
- (B) Pointers can store the address of another pointer
- (C) Pointers are automatically dereferenced in expression
- (D) Pointers cannot be used to access structure members

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

- (1) (A) and (C) Only
- (2) (A) and (B) Only
- (3) (B) and (C) Only
- (4) (C) and (D) Only

Question Number : 121 Question Id : 5330723796 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Which of the following statements about pointers in C are TRUE.

- (A) Pointers can be used to access array elements
- (B) Pointers can store the address of another pointer
- (C) Pointers are automatically dereferenced in expression
- (D) Pointers cannot be used to access structure members

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

- (1) (A) and (C) Only
- (2) (A) and (B) Only
- (3) (B) and (C) Only
- (4) (C) and (D) Only

Question Number : 122 Question Id : 5330723797 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Which of the following are TRUE about constructors in C++ ?

- (A) A constructor can be overloaded.
- (B) A constructor does not have a return type.
- (C) A constructor must be declared as a friend function.
- (D) A constructor is called when an object is destroyed.

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

- (1) (B), (C), (D) Only
- (2) (B), (C) Only
- (3) (A), (B), (C) Only
- (4) (A), (B) Only

Question Number : 122 Question Id : 5330723797 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Which of the following are TRUE about constructors in C++ ?

- (A) A constructor can be overloaded.
- (B) A constructor does not have a return type.
- (C) A constructor must be declared as a friend function.
- (D) A constructor is called when an object is destroyed.

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

- (1) (B), (C), (D) Only
- (2) (B), (C) Only
- (3) (A), (B), (C) Only
- (4) (A), (B) Only

Question Number : 123 Question Id : 5330723798 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Consider the following statements regarding combinational and sequential circuits.

- (A) Output of combinational circuits depends on the only current input.
- (B) Output of combinational circuit depends on the both current input and previous output.
- (C) Output of sequential circuit depends on the current input.
- (D) Output of sequential circuit depends on both current input and previous output.

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

- (1) (A) and (C) Only
- (2) (A) and (D) Only
- (3) (B) and (D) Only
- (4) (B) and (C) Only

Question Number : 123 Question Id : 5330723798 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Consider the following statements regarding combinational and sequential circuits.

- (A) Output of combinational circuits depends on the only current input.
- (B) Output of combinational circuit depends on the both current input and previous output.
- (C) Output of sequential circuit depends on the current input.
- (D) Output of sequential circuit depends on both current input and previous output.

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

- (1) (A) and (C) Only
- (2) (A) and (D) Only
- (3) (B) and (D) Only
- (4) (B) and (C) Only

Question Number : 124 Question Id : 5330723799 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Consider the following relations on $\{1, 2, 3, 4\}$. Which of the following relations are reflexive ?

- (A) $R_1 = \{(1, 1), (1, 2), (2, 1), (2, 2), (3, 4), (4, 1), (4, 4)\}$
- (B) $R_2 = \{(1, 1), (1, 2), (2, 1)\}$
- (C) $R_3 = \{(1, 1), (1, 2), (1, 4), (2, 1), (2, 2), (3, 3), (4, 1), (4, 4)\}$
- (D) $R_4 = \{(2, 1), (3, 1), (3, 2), (4, 1), (4, 2), (4, 3)\}$
- (E) $R_5 = \{(1, 1), (1, 2), (1, 3), (1, 4), (2, 2), (2, 3), (2, 4), (3, 3), (3, 4), (4, 4)\}$

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

- (1) (A), (B) and (C) Only
- (2) (A), (D) and (E) Only
- (3) (D) and (E) Only
- (4) (C) and (E) Only

Question Number : 124 Question Id : 5330723799 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Consider the following relations on $\{1, 2, 3, 4\}$. Which of the following relations are reflexive ?

- (A) $R_1 = \{(1, 1), (1, 2), (2, 1), (2, 2), (3, 4), (4, 1), (4, 4)\}$
- (B) $R_2 = \{(1, 1), (1, 2), (2, 1)\}$
- (C) $R_3 = \{(1, 1), (1, 2), (1, 4), (2, 1), (2, 2), (3, 3), (4, 1), (4, 4)\}$
- (D) $R_4 = \{(2, 1), (3, 1), (3, 2), (4, 1), (4, 2), (4, 3)\}$
- (E) $R_5 = \{(1, 1), (1, 2), (1, 3), (1, 4), (2, 2), (2, 3), (2, 4), (3, 3), (3, 4), (4, 4)\}$

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

- (1) (A), (B) and (C) Only
- (2) (A), (D) and (E) Only
- (3) (D) and (E) Only
- (4) (C) and (E) Only

Question Number : 125 Question Id : 5330723800 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Consider the following if p and q are two statements.

- (A) $\sim(p \wedge q) \equiv \sim p \vee \sim q$
- (B) $\sim(p \vee q) \equiv \sim p \wedge \sim q$
- (C) $p \wedge \sim p \equiv T$
- (D) $\sim(p \Rightarrow q) \equiv p \wedge \sim q$
- (E) $p \vee q \equiv \sim p \vee \sim q$

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

- (1) (A), (B) and (D) Only
- (2) (A), (C) and (D) Only
- (3) (C), (D) and (E) Only
- (4) (A), (B) and (C) Only

Question Number : 125 Question Id : 5330723800 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Consider the following if p and q are two statements.

- (A) $\sim(p \wedge q) \equiv \sim p \vee \sim q$
- (B) $\sim(p \vee q) \equiv \sim p \wedge \sim q$
- (C) $p \wedge \sim p \equiv T$
- (D) $\sim(p \Rightarrow q) \equiv p \wedge \sim q$
- (E) $p \vee q \equiv \sim p \vee \sim q$

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

- (1) (A), (B) and (D) Only
- (2) (A), (C) and (D) Only
- (3) (C), (D) and (E) Only
- (4) (A), (B) and (C) Only

Question Number : 126 Question Id : 5330723801 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Match List - I with List - II.

List - I (Queries)	List - II (Probability)
(A) A bag contains 6 white and 4 red balls. Two balls are drawn at random. What is the chance, they will be the same colour ?	(I) $3/68$
(B) In a pack of 52 cards, one card is drawn at random, what is the probability that it is either a king or a queen ?	(II) $14/68$
(C) A bag contains 6 red, 4 white and 8 blue balls. If three balls are drawn at random, find the probability of 1 red and 2 white balls ?	(III) $2/3$
(D) A bag contains 6 red, 4 white and 8 blue balls. If three balls are drawn at random. Find the probability of 2 blue and 1 red balls ?	(IV) $7/15$

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

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

Question Number : 126 Question Id : 5330723801 Question Type : MCQ Option Shuffling : No
Correct Marks : 2 Wrong Marks : 0

Match List - I with List - II.

List - I (Queries)	List - II (Probability)
(A) A bag contains 6 white and 4 red balls. Two balls are drawn at random. What is the chance, they will be the same colour ?	(I) $3/68$
(B) In a pack of 52 cards, one card is drawn at random, what is the probability that it is either a king or a queen ?	(II) $14/68$
(C) A bag contains 6 red, 4 white and 8 blue balls. If three balls are drawn at random, find the probability of 1 red and 2 white balls ?	(III) $2/3$
(D) A bag contains 6 red, 4 white and 8 blue balls. If three balls are drawn at random. Find the probability of 2 blue and 1 red balls ?	(IV) $7/15$

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

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

Question Number : 127 Question Id : 5330723802 Question Type : MCQ Option Shuffling : No
Correct Marks : 2 Wrong Marks : 0

A graph G with number of vertices greater and equal than three i.e. $(n \geq 3)$ is a Hamiltonian graph, if the degree of each vertex is greater and equal to

- (1) Equal to number of vertices
- (2) Double of number of vertices
- (3) Half of number of vertices
- (4) Four times of number of vertices

Question Number : 127 Question Id : 5330723802 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

A graph G with number of vertices greater and equal than three i.e. $(n \geq 3)$ is a Hamiltonian graph, if the degree of each vertex is greater and equal to

- (1) Equal to number of vertices
- (2) Double of number of vertices
- (3) Half of number of vertices
- (4) Four times of number of vertices

Question Number : 128 Question Id : 5330723803 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Match List - I with List - II.

List - I

(Recurrence Relations)

- (A) $T(n) = 2T(n/2) + n$
- (B) $T(n) = T(n/2) + 1$
- (C) $T(n) = 2T(n/2) + 1$
- (D) $T(n) = T(n-1) + 1$

List - II

(Complexity)

- (I) $T(n) = \theta(n \log n)$ {exact solution}
- (II) $O(n^2)$
- (III) $T(n) = \theta(n)$ {exact solution}
- (IV) $O(n)$

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

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

Question Number : 128 Question Id : 5330723803 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Match List - I with List - II.

List - I

(Recurrence Relations)

- (A) $T(n) = 2T(n/2) + n$
 (B) $T(n) = T(n/2) + 1$
 (C) $T(n) = 2T(n/2) + 1$
 (D) $T(n) = T(n-1) + 1$

List - II

(Complexity)

- (I) $T(n) = \theta(n \log n)$ {exact solution}
 (II) $O(n^2)$
 (III) $T(n) = \theta(n)$ {exact solution}
 (IV) $O(n)$

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

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

Question Number : 129 Question Id : 5330723804 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Match List - I with List - II.

List - I

(IP Address)

- (A) 10.20.30.40
 (B) 210.20.30.3
 (C) 180.30.100.10
 (D) 252.5.15.11

List - II

(Class)

- (I) Class E
 (II) Class B
 (III) Class A
 (IV) Class C

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

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

Question Number : 129 Question Id : 5330723804 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Match List - I with List - II.

List - I

(IP Address)

- (A) 10.20.30.40
 (B) 210.20.30.3
 (C) 180.30.100.10
 (D) 252.5.15.11

List - II

(Class)

- (I) Class E
 (II) Class B
 (III) Class A
 (IV) Class C

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

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

Question Number : 130 Question Id : 5330723805 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Match List - I with List - II.

List - I (Counter)	List - II (uses/working)
(A) N-bit Ring Counter	(I) Uses universal clock
(B) Synchronous Counter	(II) Counts exactly N states
(C) Asynchronous Counter	(III) Counts 0 to 9
(D) Decimal Counter	(IV) Main clock is applied to first flip-flop only

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

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

Question Number : 130 Question Id : 5330723805 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Match List - I with List - II.

List - I (Counter)	List - II (uses/working)
(A) N-bit Ring Counter	(I) Uses universal clock
(B) Synchronous Counter	(II) Counts exactly N states
(C) Asynchronous Counter	(III) Counts 0 to 9
(D) Decimal Counter	(IV) Main clock is applied to first flip-flop only

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

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

Question Number : 131 Question Id : 5330723806 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Match List - I with List - II.

List - I

(computing systems)

- (A) Half Adder
- (B) Decoder
- (C) Register
- (D) Main memory

List - II

(working/output)

- (I) Has n input and 2^n output
- (II) CPU Storage Unit
- (III) Used to store program at runtime
- (IV) 2-bit addition circuit

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

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

Question Number : 131 Question Id : 5330723806 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Match List - I with List - II.

List - I

(computing systems)

- (A) Half Adder
- (B) Decoder
- (C) Register
- (D) Main memory

List - II

(working/output)

- (I) Has n input and 2^n output
- (II) CPU Storage Unit
- (III) Used to store program at runtime
- (IV) 2-bit addition circuit

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

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

Question Number : 132 Question Id : 5330723807 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Match List - I with List - II.

List - I

- (A) The activation function
 (B) The learning method of perceptron

List - II

- (I) is called the delta rule.
 (II) is one of the key components of the perceptron as in the most common neural network architecture.
 (III) is always boolean like a switch.
 (IV) system identification and control.

(C) Areas of application of artificial neural network include

(D) The output of the perceptron

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

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

Question Number : 132 Question Id : 5330723807 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Match List - I with List - II.

List - I

- (A) The activation function
 (B) The learning method of perceptron

List - II

- (I) is called the delta rule.
 (II) is one of the key components of the perceptron as in the most common neural network architecture.
 (III) is always boolean like a switch.
 (IV) system identification and control.

(C) Areas of application of artificial neural network include

(D) The output of the perceptron

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

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

Question Number : 133 Question Id : 5330723808 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Match List - I with List - II.

List - I

- (A) Natural language processing
- (B) Reinforcement learning
- (C) Support vector machine
- (D) Expert system

List - II

- (I) A method of training algorithm by rewarding desired behaviour and/or punishing undesired one.
- (II) System designed to emulate the decision making abilities of a human expert.
- (III) A branch of AI focused on understanding and generating human language.
- (IV) A machine learning technique that finds the hyper plane that best separates different class in a feature space.

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

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

Question Number : 133 Question Id : 5330723808 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Match List - I with List - II.

List - I

- (A) Natural language processing
- (B) Reinforcement learning
- (C) Support vector machine
- (D) Expert system

List - II

- (I) A method of training algorithm by rewarding desired behaviour and/or punishing undesired one.
- (II) System designed to emulate the decision making abilities of a human expert.
- (III) A branch of AI focused on understanding and generating human language.
- (IV) A machine learning technique that finds the hyper plane that best separates different class in a feature space.

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

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

Question Number : 134 Question Id : 5330723809 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Match List - I with List - II.**List - I**

- (A) Representation of bits
- (B) Physical Address
- (C) Logical Address
- (D) Segmentation and reassembly

List - II

- (I) Transport layer
- (II) Physical layer
- (III) Network layer
- (IV) Data link layer

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

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

Question Number : 134 Question Id : 5330723809 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Match List - I with List - II.**List - I**

- (A) Representation of bits
- (B) Physical Address
- (C) Logical Address
- (D) Segmentation and reassembly

List - II

- (I) Transport layer
- (II) Physical layer
- (III) Network layer
- (IV) Data link layer

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

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

Question Number : 135 Question Id : 5330723810 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Match List - I with List - II.**List - I**

- (A) Dijkstra's Algorithms
- (B) Floyd-Warshall Algorithms
- (C) Bellman-frod Algorithms
- (D) Prim's Algorithms

List - II

- (I) Find the shortest path between all pairs of vertices in a graph with positive or negative edge weights.
- (II) Finds the shortest path in a weighted graph with non-negative edge weights.
- (III) Sorts elements by repeatedly moving them post neighboring elements that are smaller.
- (IV) Determines the strongest connected components in a directed graph.

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

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

Question Number : 135 Question Id : 5330723810 Question Type : MCQ Option Shuffling : No
Correct Marks : 2 Wrong Marks : 0

Match List - I with List - II.

List - I

- (A) Dijkstra's Algorithms
- (B) Floyd-Warshall Algorithms
- (C) Bellman-frod Algorithms
- (D) Prim's Algorithms

List - II

- (I) Find the shortest path between all pairs of vertices in a graph with positive or negative edge weights.
- (II) Finds the shortest path in a weighted graph with non-negative edge weights.
- (III) Sorts elements by repeatedly moving them post neighboring elements that are smaller.
- (IV) Determines the strongest connected components in a directed graph.

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

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

Question Number : 136 Question Id : 5330723811 Question Type : MCQ Option Shuffling : No
Correct Marks : 2 Wrong Marks : 0

Match List - I with List - II.

List - I

(software design principles)

- (A) Cohesion
- (B) Coupling
- (C) Abstraction
- (D) Modularity

List - II

(Definition)

- (I) Degree to which one module relies on another module.
- (II) Dividing a software system into distinct modules.
- (III) Degree to which elements of a module belong together.
- (IV) Simplifying complex reality by modeling classes appropriate to the problem.

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

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

Question Number : 136 Question Id : 5330723811 Question Type : MCQ Option Shuffling : No
Correct Marks : 2 Wrong Marks : 0

Match List - I with List - II.

List - I

(software design principles)

- (A) Cohesion
- (B) Coupling
- (C) Abstraction
- (D) Modularity

List - II

(Definition)

- (I) Degree to which one module relies on another module.
- (II) Dividing a software system into distinct modules.
- (III) Degree to which elements of a module belong together.
- (IV) Simplifying complex reality by modeling classes appropriate to the problem.

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

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

Question Number : 137 Question Id : 5330723812 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Match List - I with List - II.

List - I

(Testing Type)

- (A) Unit testing
- (B) Integrating testing
- (C) System testing
- (D) Acceptance testing

List - II

(Description)

- (I) Testing individual components of the software.
- (II) Testing the interaction between integrated components.
- (III) Testing to verify the system meets business needs.
- (IV) Testing the complete system to ensure it meets requirements.

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

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

Question Number : 137 Question Id : 5330723812 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Match List - I with List - II.

List - I (Testing Type)	List - II (Description)
(A) Unit testing	(I) Testing individual components of the software.
(B) Integrating testing	(II) Testing the interaction between integrated components.
(C) System testing	(III) Testing to verify the system meets business needs.
(D) Acceptance testing	(IV) Testing the complete system to ensure it meets requirements.

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

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

Question Number : 138 Question Id : 5330723813 Question Type : MCQ Option Shuffling : No
Correct Marks : 2 Wrong Marks : 0

Match List - I with List - II.

List - I (operating system concepts)	List - II (characteristics)
(A) Paging	(I) Evicts least recently used process
(B) LRU (Least Recently Used)	(II) Extends physical memory
(C) C-SCAN	(III) Logical to physical mapping
(D) Virtual Memory	(IV) Circular disk access

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

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

Question Number : 138 Question Id : 5330723813 Question Type : MCQ Option Shuffling : No
Correct Marks : 2 Wrong Marks : 0

Match List - I with List - II.

List - I (operating system concepts)	List - II (characteristics)
(A) Paging	(I) Evicts least recently used process
(B) LRU (Least Recently Used)	(II) Extends physical memory
(C) C-SCAN	(III) Logical to physical mapping
(D) Virtual Memory	(IV) Circular disk access

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

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

**Question Number : 139 Question Id : 5330723814 Question Type : MCQ Option Shuffling : No
Correct Marks : 2 Wrong Marks : 0**

Match List - I with List - II.

List - I	List - II
(A) HTML	(I) Allow for dynamic and interactive web pages.
(B) DHTML	(II) Defines the structure of web pages.
(C) XML	(III) Object-oriented programming language for web applications.
(D) JAVA	(IV) Used for data storage and transport.

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

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

**Question Number : 139 Question Id : 5330723814 Question Type : MCQ Option Shuffling : No
Correct Marks : 2 Wrong Marks : 0**

Match List - I with List - II.

List - I	List - II
(A) HTML	(I) Allow for dynamic and interactive web pages.
(B) DHTML	(II) Defines the structure of web pages.
(C) XML	(III) Object-oriented programming language for web applications.
(D) JAVA	(IV) Used for data storage and transport.

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

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

**Question Number : 140 Question Id : 5330723815 Question Type : MCQ Option Shuffling : No
Correct Marks : 2 Wrong Marks : 0**

Match List - I with List - II.**List - I****(Algorithms)**

- (A) First Come First Served (FCFS)
 (B) Shortest Job First (SJF)
 (C) Round Robin (RR)
 (D) Priority Scheduling

List - II**(Characteristics)**

- (I) Each process is assigned a priority.
 (II) Ensures fair allocation of CPU time by assigning time slice.
 (III) Processes are executed in the order they arrive.
 (IV) Select the process for execution with smallest next Burst time.

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

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

Question Number : 140 Question Id : 5330723815 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Match List - I with List - II.**List - I****(Algorithms)**

- (A) First Come First Served (FCFS)
 (B) Shortest Job First (SJF)
 (C) Round Robin (RR)
 (D) Priority Scheduling

List - II**(Characteristics)**

- (I) Each process is assigned a priority.
 (II) Ensures fair allocation of CPU time by assigning time slice.
 (III) Processes are executed in the order they arrive.
 (IV) Select the process for execution with smallest next Burst time.

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

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

Sub-Section Number :

2

Sub-Section Id :

533072153

Question Shuffling Allowed :

No

Question Id : 5330723816 Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension

Questions : No Question Pattern Type : NonMatrix

Question Numbers : (141 to 145)

Question Label : Comprehension

Read the below passage and answer the questions .

Artificial Neural Networks (ANNs) are computational models inspired by the human brain's neural networks. They consist of inter-connected nodes, or neurons, organized into layers : an input layers, one or more hidden layers and an output layers. Each connection between neurons has a weight that adjusts as learning progresses allowing the network to adopt and improve its performance. ANNs are particularly effective in recognizing patterns making them valuable for tasks such as image and speech recognition, Natural language processing and predictive analytics. Learning in ANNs typically involves training algorithms like back propagation, which minimize the error by adjusting the weights. As a subset of machine learning, ANNs have revolutionized the field of Artificial Intelligence by providing solutions to complex problems that traditional algorithms struggle with.

Sub questions

Question Number : 141 Question Id : 5330723817 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

What is the role of Back Propagation Algorithm ?

- (1) To reduce error
- (2) To secure network
- (3) To control speed of data
- (4) To add different layers

Question Number : 142 Question Id : 5330723818 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Artificial Neural Networks (ANNs) are inspired by :

- (1) Quantum mechanics
- (2) Human brain's neural network
- (3) Computer Hardware architecture
- (4) Genetic algorithm

Question Number : 143 Question Id : 5330723819 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Which of the following layers may be more than one in number ?

- (1) Input layer
- (2) Hidden layer
- (3) Output layer
- (4) Physical layer

Question Number : 144 Question Id : 5330723820 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

What is the role of weights in an ANN ?

- (1) To store data
- (2) To adjust and improve network performance
- (3) To control the speed
- (4) To secure the network

Question Number : 145 Question Id : 5330723821 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Which of the following is/are the application area(s) of ANN ?

- (A) Natural Language Processing
- (B) Image Processing
- (C) Pattern Recognition
- (D) Speech Recognition

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

- (1) (A) and (B) Only
- (2) (B) and (C) Only
- (3) (A), (B) and (C) Only
- (4) (A), (B), (C) and (D)

Question Id : 5330723816 Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No Question Pattern Type : NonMatrix

Question Numbers : (141 to 145)

Question Label : Comprehension

Read the below passage and answer the questions .

Artificial Neural Networks (ANNs) are computational models inspired by the human brain's neural networks. They consist of inter-connected nodes, or neurons, organized into layers : an input layers, one or more hidden layers and an output layers. Each connection between neurons has a weight that adjusts as learning progresses allowing the network to adopt and improve its performance. ANNs are particularly effective in recognizing patterns making them valuable for tasks such as image and speech recognition, Natural language processing and predictive analytics. Learning in ANNs typically involves training algorithms like back propagation, which minimize the error by adjusting the weights. As a subset of machine learning, ANNs have revolutionized the field of Artificial Intelligence by providing solutions to complex problems that traditional algorithms struggle with.

Sub questions

Question Number : 141 Question Id : 5330723817 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

What is the role of Back Propagation Algorithm ?

- (1) To reduce error
- (2) To secure network
- (3) To control speed of data
- (4) To add different layers

Question Number : 142 Question Id : 5330723818 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Artificial Neural Networks (ANNs) are inspired by :

- (1) Quantum mechanics
- (2) Human brain's neural network
- (3) Computer Hardware architecture
- (4) Genetic algorithm

Question Number : 143 Question Id : 5330723819 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Which of the following layers may be more than one in number ?

- (1) Input layer
- (2) Hidden layer
- (3) Output layer
- (4) Physical layer

Question Number : 144 Question Id : 5330723820 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

What is the role of weights in an ANN ?

- (1) To store data
- (2) To adjust and improve network performance
- (3) To control the speed
- (4) To secure the network

Question Number : 145 Question Id : 5330723821 Question Type : MCQ Option Shuffling : No Correct Marks : 2 Wrong Marks : 0

Which of the following is/are the application area(s) of ANN ?

- (A) Natural Language Processing
- (B) Image Processing
- (C) Pattern Recognition
- (D) Speech Recognition

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

- (1) (A) and (B) Only
- (2) (B) and (C) Only
- (3) (A), (B) and (C) Only
- (4) (A), (B), (C) and (D)

Sub-Section Number : 3
Sub-Section Id : 533072154
Question Shuffling Allowed : No

Question Id : 5330723822 Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No Question Pattern Type : NonMatrix

Question Numbers : (146 to 150)

Question Label : Comprehension

Read the below passage and answer the questions .

The Banker's Algorithm is a critical deadlock avoidance method in operating systems, designed to facilitate resource allocation without causing deadlock. It operates by maintaining information about the maximum resources. Each process may require, the current allocated resources and the available resources in the system. The algorithm checks each resource request to determine, if granting it would leave the system in a safe state, meaning that there is always a sequence in which all processes can complete their execution without getting stuck due to resource unavailability. Each process must specify its maximum demand for each resource type before it starts execution. When a process requests additional resources, the algorithm checks if granting the request will keep the system in a safe state. If so, the resources are allocated otherwise the process must wait until its request can be safely fulfilled.

Sub questions

Question Number : 146 Question Id : 5330723823 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

What information is used to determine if a resource request can be granted ?

- (1) Available resources and current allocation of each process
- (2) CPU utilization of each process
- (3) Number of processes waiting for resources
- (4) Arrival time of each process

Question Number : 147 Question Id : 5330723824 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

What is the primary goal of the Banker's Algorithm ?

- (1) To allocate resources optimally
- (2) To prevent processes from requesting resources
- (3) To detect and recover from deadlocks
- (4) To maximise CPU utilization

Question Number : 148 Question Id : 5330723825 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Which of the following is NOT a requirement for Banker's algorithm to grant a resource request ?

- (1) The requested resources must be available.
- (2) The system must be in a safe state after granting the request.
- (3) The request must not exceed the maximum resources the process can request.
- (4) The process must be the only one requesting resources.

Question Number : 149 Question Id : 5330723826 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

What is the significance of the Banker's algorithm in terms of resource management ?

- (1) It ensures that all processes can finish their execution without deadlock.
- (2) It eliminates the need for processes to request resources.
- (3) It accelerates the execution of critical sections in processes.
- (4) It minimizes the number of context switches between processes.

Question Number : 150 Question Id : 5330723827 Question Type : MCQ Option Shuffling : No

Correct Marks : 2 Wrong Marks : 0

Which data structure does the Banker's Algorithm use to maintain the state of available, maximum and allocated resources ?

- (1) Priority Queue
- (2) Hash table
- (3) Wait-for-Graph
- (4) Matrices and Vectors

Question Id : 5330723822 Question Type : COMPREHENSION Sub Question Shuffling Allowed : Yes Group Comprehension

Questions : No Question Pattern Type : NonMatrix

Question Numbers : (146 to 150)

Question Label : Comprehension

Read the below passage and answer the questions .

The Banker's Algorithm is a critical deadlock avoidance method in operating systems, designed to facilitate resource allocation without causing deadlock. It operates by maintaining information about the maximum resources. Each process may require, the current allocated resources and the available resources in the system. The algorithm checks each resource request to determine, if granting it would leave the system in a safe state, meaning that there is always a sequence in which all processes can complete their execution without getting stuck due to resource unavailability. Each process must specify its maximum demand for each resource type before it starts execution. When a process requests additional resources, the algorithm checks if granting the request will keep the system in a safe state. If so, the resources are allocated otherwise the process must wait until its request can be safely fulfilled.

Sub questions**Question Number : 146 Question Id : 5330723823 Question Type : MCQ Option Shuffling : No****Correct Marks : 2 Wrong Marks : 0**

What information is used to determine if a resource request can be granted ?

- (1) Available resources and current allocation of each process
- (2) CPU utilization of each process
- (3) Number of processes waiting for resources
- (4) Arrival time of each process

Question Number : 147 Question Id : 5330723824 Question Type : MCQ Option Shuffling : No**Correct Marks : 2 Wrong Marks : 0**

What is the primary goal of the Banker's Algorithm ?

- (1) To allocate resources optimally
- (2) To prevent processes from requesting resources
- (3) To detect and recover from deadlocks
- (4) To maximise CPU utilization

Question Number : 148 Question Id : 5330723825 Question Type : MCQ Option Shuffling : No**Correct Marks : 2 Wrong Marks : 0**

Which of the following is NOT a requirement for Banker's algorithm to grant a resource request ?

- (1) The requested resources must be available.
- (2) The system must be in a safe state after granting the request.
- (3) The request must not exceed the maximum resources the process can request.
- (4) The process must be the only one requesting resources.

Question Number : 149 Question Id : 5330723826 Question Type : MCQ Option Shuffling : No**Correct Marks : 2 Wrong Marks : 0**

What is the significance of the Banker's algorithm in terms of resource management ?

- (1) It ensures that all processes can finish their execution without deadlock.
- (2) It eliminates the need for processes to request resources.
- (3) It accelerates the execution of critical sections in processes.
- (4) It minimizes the number of context switches between processes.

Question Number : 150 Question Id : 5330723827 Question Type : MCQ Option Shuffling : No**Correct Marks : 2 Wrong Marks : 0**

Which data structure does the Banker's Algorithm use to maintain the state of available, maximum and allocated resources ?

- (1) Priority Queue
- (2) Hash table
- (3) Wait-for-Graph
- (4) Matrices and Vectors