

TS SET

Notations :

- 1.Options shown in green color and with ✓ icon are correct.
- 2.Options shown in red color and with ✗ icon are incorrect.

Subject Name :	MATHEMATICAL SCIENCES
Duration :	180
Total Marks :	300
Display Marks:	Yes
Calculator :	None
Magnifying Glass Required? :	No
Ruler Required? :	No
Eraser Required? :	No
Scratch Pad Required? :	No
Rough Sketch/Notepad Required? :	No
Protractor Required? :	No
Show Watermark on Console? :	Yes
Highlighter :	No
Auto Save on Console?	Yes
Change Font Color :	No
Change Background Color :	No
Change Theme :	No
Help Button :	No
Show Reports :	No
Show Progress Bar :	No

Teaching and Research Aptitude

Group Number :	1
Group Id :	270282213
Group Maximum Duration :	60
Group Minimum Duration :	60
Show Attended Group? :	No
Edit Attended Group? :	No
Break time :	0
Group Marks :	100
Is this Group for Examiner? :	No
Examiner permission :	Cant View
Show Progress Bar? :	No

Teaching and Research Aptitude

Section Id :	270282213
Section Number :	1
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	42
Number of Questions to be attempted :	42
Section Marks :	100
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	2702821186
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 1 Question Id : 27028216180 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Questioning skill in teaching is most useful in
బోధనలో ప్రశ్నించే నైపుణ్యం ఇందుకు ఎక్కువగా దోహదపడును

Options :

1. ✓ Ensuring students' active participation in learning
విద్యార్థులు అభ్యసనలో చురుకుగా పాల్గొనడానికి
2. ✘ Memorizing the facts by students
విద్యార్థులు విషయాలను గుర్తుపెట్టుకోవడానికి
3. ✘ Making students disciplined
విద్యార్థులను క్రమశిక్షణలో ఉంచడానికి
4. ✘ Preparing students for examination
విద్యార్థులను పరీక్షలకు సిద్ధం చేయడానికి

Question Number : 2 Question Id : 27028216181 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Which one of the following is considered as main sign of motivated teaching?
క్రింది వానిలో ప్రేరణ కల్పించే బోధన యొక్క ప్రధాన సూచిక

Options :

1. ✘ Most of the students listening carefully
చాలామంది విద్యార్థులు శ్రద్ధగా వినడం

2. ✘ Pin drop silence in the classroom
తరగతి గదిలో పూర్తి నిశబ్దం

3. ✔ Students asking relevant questions
విద్యార్థులు సంబంధిత ప్రశ్నలు అడగడం

4. ✘ Students taking notes with interest
విద్యార్థులు ఆసక్తితో విషయాలను రాసుకోవడం

Question Number : 3 Question Id : 27028216182 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Which one of the following statements is correct with regard to nature of multiple - choice type questions?

బహుకైచ్చిక _____ ప్రశ్నలకు సంబంధించి క్రింది ప్రతి పాదనలలో సరియైనది

Options :

1. ✔ They are more objective than true-false type questions.
తప్పు-ఒప్పు ప్రశ్నలకన్న ఎక్కువ లక్ష్యాత్మకమైనవి

2. ✘ They are less objective than essay type questions
వ్యాసరూప ప్రశ్నలకన్న తక్కువ లక్ష్యాత్మకమైనవి

3. ✘ They are more subjective than short-answer type questions.
లఘు సమాధాన ప్రశ్నల కన్న ఎక్కువ ఆత్మాశ్రయమైవి

4. ✘

They are more subjective than match the following type questions.

జతపరుచు ప్రశ్నలకన్న ఎక్కువ అత్యాశ్రయమైనవి

Question Number : 4 Question Id : 27028216183 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum

Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No

Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

Scholastic Achievement tests are commonly used for the purpose of:

విద్యాసాధన పరీక్షలను సాధారణంగా దీనికొరకు ఉపయోగిస్తారు

Options :

1. ✘ Selecting candidates for a course
విద్యార్థులు ఏదేని కోర్సులో ప్రవేశానికి ఎంపిక చేయడంకొరకు
2. ✘ Making selections for a specific job
నిర్దిష్ట ఉద్యోగానికి ఎంపిక నిమిత్తం
3. ✔ To understand learning outcomes of an academic course
విద్యా విషయక కోర్సు అభ్యసన ఫలితాలను అవగాహన చేసుకోవడానికి
4. ✘ Identifying strengths and weaknesses of learners
అభ్యాసకుల బలాలు, బలహీనతలను గుర్తించడానికి

Question Number : 5 Question Id : 27028216184 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum

Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No

Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

Which of the following is not a characteristic of Continuous and Comprehensive Evaluation?

దీనిలో నిరంతర సమగ్ర మూల్యాంకనం లక్షణం కానిది ఏది?

Options :

1. ✓ It increases the workload on students
ఇది విద్యార్థులపై పనిభారం పెంచుతుంది

2. ✘ It reduces theoretical testing
సిద్ధాంతపరమైన పరీక్షలను తగ్గిస్తుంది

3. ✘ It evaluates every aspect of the students.
విద్యార్థులకు సంబంధించిన అన్ని అంశాల మూల్యాంకనం చేయును

4. ✘ It helps in reducing examination phobia.
పరీక్షల భయాన్ని తగ్గించడంలో దోహదపడుతుంది

Sub-Section Number :

2

Sub-Section Id :

2702821187

Question Shuffling Allowed :

Yes

Is Section Default? :

null

Question Number : 6 Question Id : 27028216185 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum

Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No

Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

The research that meant for immediate application is

వెంటనే వినియోగించడానికి వీలైన పరిశోధన రకం

Options :

1. ✘ Experimental research
ప్రయోగాత్మక పరిశోధన

2. ✓ Action research
చర్యాత్మక పరిశోధన

3. ✘ Fundamental research
ప్రాథమిక లేక మూలపరిశోధన

4. ✘ Survey research
సర్వే పరిశోధన

Question Number : 7 Question Id : 27028216186 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Sampling error decreases with the
ప్రతిచయ లోపాన్ని తగ్గించడానికి

Options :

1. ✘ decrease in sample size
ప్రతిచయన పరిమాణాన్ని తగ్గించడం

2. ✓ increase in sample size
ప్రతిచయన పరిమాణాన్ని పెంచడం

3. ✘ process of randomization
యాధృచ్ఛిక ప్రక్రియ

4. ✘ process of analysis
విశ్లేషణ ప్రక్రియ

Question Number : 8 Question Id : 27028216187 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

The variable which impacts the relationship between an independent variable and a dependent variable is known as

స్వతంత్ర మరియు పరితంత్ర చరాలమధ్య గల సంబంధాన్ని ప్రభావితం చేసే చరరాశిని ఏమందురు?

Options :

1. ✘ antecedent variable
అంటిసిడెంట్ చరరాశి

2. ✘ precedent variable
ప్రెసిడెంట్ చరరాశి

3. ✘ predictor variable
ప్రిడిక్టర్ చరరాశి

4. ✔ intervening variable
మధ్యస్థ చరరాశి

Question Number : 9 Question Id : 27028216188 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

Which of the following sampling methods is not based on probability?

క్రింది వానిలో ఏ ప్రతిచయన పద్ధతి సంభావత పై ఆధారపడి ఉండదు?

Options :

1. ✘ Systematic Sampling
క్రమపద్ధతి గల ప్రతిచయనము

2. ✘ Stratified Sampling
స్రరిత ప్రతిచయనము

3. ✔ Quota Sampling
కోటా ప్రతిచయనము

4. ✘ Cluster Sampling
సముచ్చయ ప్రతిచయనము

**Question Number : 10 Question Id : 27028216189 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No**

Correct Marks : 2 Wrong Marks : 0

A hypothesis is
ఒక పరికల్పన

Options :

1. ✘ A proven statement for an argument.
ఒక చర్చకు సంబంధించి నిరూపణ ప్రతిపాదన

2. ✘ A statement which is not required to be tested.
పరీక్షించాల్సిన అవసరం లేని ప్రతిపాదన

3. ✔

A tentative statement which is to be tested.

పరీక్షించాల్సిన తాత్కాలిక ప్రతిపాదన

A Scientific statement.

శాస్త్రీయమైన ప్రతిపాదన

4. ✖

Sub-Section Number :	3
Sub-Section Id :	2702821188
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Id : 27028216190 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Question Numbers : (11 to 15)

Question Label : Comprehension

Read the passage and answers the questions from 11 to 15:

The air crash of Taihoku took place on August 18, 1945 at a time when aircraft were not the most reliable form of transport. During World War II dozens of crashes took place which altered the course of the war. What, however, was special about the air crash in Taihoku was that it coincided with the defeat of Japan in war. The outcome of the crash was that Netaji Subhas Chandra Bose who had suffered a lot of uncertainties during the last few months of the war disappeared in a fog of mystery and speculation even as his closest companions described that he had perished in the crash.

Ashis Ray has made a significant observation about the reasons that allowed the persistence of Netaji's myth in Indian politics. The years from 1937 to 1947 were landmark for various reasons. Apart from Partition, this period saw many dramatic violent incidents. Netaji's disappearance was one of them. A major reason that prevented a credible discussion on the death of Netaji was the breakdown of the internal mechanism of the Congress party. Jawaharlal Nehru who took over as the prime minister of India remained on difficult terms with the Boses who maintained a power centre in the Congress party. The cold war between Sarat Bose and Nehru was well known and cast a shadow on conduct of frank conversations between the two. Sarat Bose was a minister in the cabinet of Nehru before Partition.

Apart from the meticulous historical and archival research, Ray's submission is backed by Anita, the daughter of Netaji. She discloses that there were uncertainties to begin with about what exactly happened to Netaji but highlighted that out of the three commissions of inquiry Shah Nawaz Khan Commission, Khosla Commission and the Mukherjee Commission, two concluded that Netaji had died. His death in the Taihoku crash spared him all the harassment that awaited him in the hands of the Anglo-American victors. His daughter has urged that his DNA should be extracted from the remains kept at the Shinto shrine near Tokyo.

11 నుంచి 15 వరకు గల ప్రశ్నలకు సంబంధించిన పాఠ్యభాగము ఈ క్రింద ఇవ్వబడినది. దానితో పాటు 5 బహుళ ఐచ్ఛిక ప్రశ్నలు ఇవ్వబడినవి. సరైన జవాబు ఎంచుకొని రాయండి.

తైహూకు యొక్క ప్రమాదము అగస్టు 18, 1945 నాడు జరిగింది. అప్పడు విమాన ప్రయాణాలు అంత నమ్మదగినవి గా లేవు. రెండవ ప్రపంచ యుద్ధ సమయంలో జరిగిన డజన్ల కొద్ది వైమానిక ప్రమాదాలు యుద్ధ లీతులను మార్చి వేశాయి. ఏది ఏమైనప్పటి కి తైహూకు జరిగిన ప్రమాదం మరియు జపాన్ దేశం యుద్ధం లో ఓ డిపోవడం ఒకేసారి జరిగాయి. ఈ ప్రమాదం ఫలితంగా,యుద్ధంలో గత కొన్ని నెలలు గా నెలకొన్న అనిశ్చిత పరిస్థితులను ఎరుర్కొంటున్న నేతాజి సుభాష్ చంద్రభోస్ దగ్గరి సహచరుల ఊహా గానాల ప్రకారంగా నేతాజి ఈ ప్రమాదంలోనే అదృష్టం అయినట్లు గా చెప్పడం ఇప్పటికి ఊహకందని విషయం. ఆసిప్ రే భారత రాజకీయాలలో నేతాజి యొక్క అదృష్టం కు సంభందించిన కారాణాలను పరీశీలించి ముఖ్యమైన వ్యాక్యాలను చేశారు. 1937 నుండి 1947 సంవత్సరాల కాలం అనేక కారణాల వల్ల ఒక ఘోలు రాయిగా నిలిచి పోయింది. దేశ విభజన తో పాటు ఎన్నో హింసాత్మక సంఘటనలు ఈ కాలంలో చోటు చేసుకోవటంతో పాటు నేతాజి యొక్క అదృష్టం కూడ అందులో ఒకటి. ఈ అదృష్టం కాంగ్రెస్ పార్టీలోని అంతర్గత వర్గాలలో జరిగిన విచ్ఛిన్నం వల్ల నేతాజి మరణం పై చర్చ మరుగున పడింది. ప్రధాని జవహర్లాల్ నెహ్రు ఒక బోసు రాజకీయ వర్గంతో అభిప్రాయ బేధాలు కలిగి ఉండటంమే కాక వారు కాంగ్రెస్ పార్టీలో ఒక బలమైన వర్గంగా ఉన్నారు. ఈ విషయమే శరత్ బోస్ మరియు నెహ్రుల మధ్య ప్రచ్ఛన్న యుద్ధంగా మొదలై, సఖ్యతతో కూడిన సంభాషణ కూడా లేకుండా పోయింది విభజనకు ముందు నెహ్రు మంత్రి వర్గంలో శరత్ బో సు మంత్రి గా పని చేశారు. నేతాజి కుమార్తె అయిన అనిత ఖచ్చితమైన చారిత్రాత్మక పురాతన పరీశోధన ఆధారాలతో ఆసిప్ రే యొక్క వాదనలను సమర్థించింది. నేతాజికి జరిగిన ప్రమాదం పై ఉన్న అనుమానాలు మరియు అనిశ్చిత పరిస్థితులను ఆమె బట్టబయలు చేశారు. నేతాజి మరణంపై నియమించిన మూడు ఎంక్వైరి కమిషన్ లు - Shah Nawaz Khan Commission, Khosla Commission and the Mukherjee Commission అయిన మరణాన్ని రెండు కమిషన్ లు మాత్రమే నిర్ధాయించాయి. నేతాజి మరణం ఒక రకంగా ఆయనను ఆంగ్లో అమెరికన్ విశేషల వేదింపుల నుండి దూరం చేసింది. ఆయన కూమార్తె బోసు యొక్క DNA ను టోకియో కు సమీపంలో ఉన్న షింటో మందిరం లో భద్ర పరిచిన ఆయన అవశేషాల DNA తో పరీక్షలు జరిపించాలని అభ్యర్థించింది.

Sub questions

Question Number : 11 Question Id : 27028216191 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

The airplanes were in the past

విమానాలు గతంలో

Options :

1. ✓ Undependable
నమ్మదగినవి కావు

2. ✘ not advanced
ఆధునికమైనవి కావు

3. ✘ economical
తక్కువ ఖర్చుతో కూడుకొన్నవి

4. ✘ smaller
చిన్నవి

Question Number : 12 Question Id : 27028216192 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A

Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On

Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :

No

Correct Marks : 2 Wrong Marks : 0

Which of the following is correct?

వీటిలో ఏది సరైనది?

Options :

There was a cold war between Sarat Bose and Nehru. Sarat Bose was a minister in the cabinet of Nehru in post-independence.

శరత్ బోస్ మరియు నెహ్రూ మధ్య ఒక ప్రచ్ఛన్న యుద్ధం చోటు చేసుకుంది.

1. ✘ స్వాతంత్ర్యానంతరం నెహ్రూ మంత్రి వర్గంలో శరత్ బోస్ మంత్రి గా పనిచేశారు.

Sarat Bose and Nehru had different opinions. They never met again after the independence. Sarat died in air crash.

శరత్ బోస్ మరియు నెహ్రూ విభిన్న అభిప్రాయాలను కలిగి ఉన్నారు. వారు

స్వాతంత్ర్యనంతరం మరలా ఎప్పుడూ కలవలేదు. శరత్ ఎయిర్ క్రాష్ లో

2. ✖ మరణించారు.

Sarat Bose disagreed with Nehru over the Cabinet Mission Plan's call to partition Bengal between Hindu majority and Muslim majority regions. He was a cabinet minister led by Nehru before partition.

హిందూ మెజారిటీ మరియు ముస్లిం మెజారిటీ ప్రాంతాల మధ్య బెంగాల్ విభజన

కోసం కేబినెట్ మిషన్ ప్లాన్ యొక్క పిలుపుపై నెహ్రూ తో శరత్ బోస్ విభేదించాడు.

ఆయన విభజన ముందు నెహ్రూ నాయకత్వంలోని క్యాబినెట్ మంత్రి గా ఉన్నారు.

3. ✔

Nehru fought with Sarat Bose because of miscommunication when Bose was a personal assistant to him. He ordered police to catch him and keep in prison.

బోస్ ఒక వ్యక్తిగత సహాయకుడుగా ఉన్నప్పుడు నెహ్రూ శరత్ బోస్ తో వివాదం

అతన్ని పట్టుకోవడానికి మరియు జైలులో ఉండటానికి అతను పోలీసులను

ఆదేశించాడు.

4. ✖

Question Number : 13 Question Id : 27028216193 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A

Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On

Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :

No

Correct Marks : 2 Wrong Marks : 0

Try to find out the meaning for 'credible'

'క్రెడిటబుల్' అనే దానికి అర్థం తెలుసుకోవడానికి ప్రయత్నించండి

Options :

1. ✖

Impressionable
ప్రభావితమైన

2. ✓ Reliable
నమ్మదగిన

3. ✘ Debatable
వాదించ దగిన

4. ✘ Conceivable
రూపొందించదగిన

Question Number : 14 Question Id : 27028216194 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

The years 1937-1947 are the evidence of

1937-1947 సంవత్సరాలు అనేవి _____ సాక్ష్యం

Options :

Ashis Ray's ideas about Netaji's disappearance and partition of India and Pakistan.

1. ✘ అశిష్ రే యొక్క ఆలోచనలు నేతాజీ అదృశ్యం మరియు భారత్ పాకిస్తాన్ ల విభజన
గురించి

2. ✘ Netaji's disappearance and Sarat Bose's demise
నేతాజీ అదృశ్యం మరియు శరత్ బోస్ మరణం

3. ✘

Taihoku crash and Bhagat Singh's death

తైహాకు క్రాష్ మరియు భగత్ సింగ్ మరణం

Netaji's disappearance and India and Pakistan partition

4. ✓ నేతాజీ అదృశ్యం మరియు భారతదేశం మరియు పాకిస్తాన్ విభజన

Question Number : 15 Question Id : 27028216195 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A

Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On

Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :

No

Correct Marks : 2 Wrong Marks : 0

What was the mystery written in the above paragraph?

పై పేరాలో పేర్కొన్న రహస్యం ఏమిటి?

Options :

The reason of World War II

1. ✘ రెండవ ప్రపంచ యుద్ధం యొక్క కారణం

Japan's defeat

2. ✘ జపాన్ ఓటమి

Netaji's death

3. ✓ నేతాజీ మరణం

Air crash

4. ✘ విమాన ప్రమాదం

Sub-Section Number : 4
Sub-Section Id : 2702821189
Question Shuffling Allowed : Yes
Is Section Default? : null

Question Number : 16 Question Id : 27028216196 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

'Communication is the exchange of information and the transmission of meaning. It is the very essence of a social system of an organization.' This definition is given by

'కమ్యూనికేషన్ సమాచార మార్పిడి మరియు అర్థం యొక్క బదిలీ. ఇది ఒక సంస్థ యొక్క సామాజిక వ్యవస్థ యొక్క సారాంశం. "ఈ నిర్వచనాన్ని ఎవరు ఇచ్చారు?

Options :

1. ✓ Katz and Kahn
కాట్జ్ మరియు కాహ్న్
2. ✘ Myers and Myers
మైర్స్ మరియు మేయర్స్
3. ✘ Newman and Summer
న్యూమన్ మరియు సమ్మర్
4. ✘ Leland Brown
లేలాండ్ బ్రౌన్

Question Number : 17 Question Id : 27028216197 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

Assertion (A): Written communication engages any type of message that makes use of the written word.

ప్రకటన (A): వ్రాతపూర్వక సంభాషణ వ్రాతపూర్వక పదాన్ని ఉపయోగించుకుని ఏ రకమైన సందేశాన్ని అయిన చేస్తుంది.

Reason (R): Written communication is the most effective mode in any academic and business communication.

కారణం (R): వ్రాతపూర్వక సంభాషణ అకాడెమిక్ మరియు బిజినెస్ కమ్యూనికేషన్లో నైన అత్యంత ప్రభావవంతమైనది.

Choose the correct answer from the following code:

క్రింది కోడ్ నుండి సరైన సమాధానం ఎంచుకోండి:

Options :

Both (A) and (R) are true but (R) is not the correct explanation of (A)
రెండూ (A) మరియు (R) నిజమైనవి కాని (R), (A) యొక్క సరైన వివరణ కాదు
1. ✓

Both (A) and (R) are true and (R) is the correct explanation of (A)
(A) మరియు (R) ఒప్పు మరియు (R), (A) యొక్క సరైన వివరణ
2. ✘

(A) is true, but (R) is false
(A) ఒప్పు, కాని (R) తప్పు
3. ✘

(A) is false, but (R) is true
(A) తప్పు, కాని (R) ఒప్పు
4. ✘

Question Number : 18 Question Id : 27028216198 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On

Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

Communication is not
కమ్యూనికేషన్ కానిది

Options :

1. ✘ Unrepeatable
పునరావృతము కాదు

2. ✘ Inevitable
అనివార్యము

3. ✘ Irreversible
పూడ్చలేని

4. ✔ Avertable
తప్పించదగినది

Question Number : 19 Question Id : 27028216199 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A

Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On

Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

Match the items in the List – I with items in List –II according to the code given below:

ఈ క్రింది వాటిని సరియైన వాటితో జతపరచండి

List-I
జాబితా -1

1. Critical Listening
క్రిటికల్ లిజనింగ్
2. Biased Listening
బైయసడ్ వినికీడి
3. Therapeutic Listening
థెరాపటిక్ వినికీడి
4. Discriminative Listening
డిస్క్రిమినేటివ్ వినడం

List-II
జాబితా -2

- a. Misinterpretation
మిస్ ఇంటర్ప్రీటేషన్
- b. Evaluate and judge
ఇవాల్యువేట్ మరియు జడ్జ్
- c. Difference between different sounds
విభిన్న ధ్వనుల మధ్య వ్యత్యాసం
- d. Evidence based auditory intervention
ఎవిడెన్స్ ఆధారిత శ్రవణ జోక్యం

Codes:

Options :

1. ✘ 1-d, 2-b, 3-a, 4-c

2. ✘ 1- a, 2-b, 3-d, 4-c

3. ✘ 1-c, 2-b, 3-d, 4-a

4. ✔ 1-b, 2- a, 3-d, 4-c

Question Number : 20 Question Id : 27028216200 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A

Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On

Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :

No

Correct Marks : 2 Wrong Marks : 0

Assertion (A): All the teachers can communicate in the classroom effectively.

ప్రకటన (A): ఉపాధ్యాయులందరూ తరగతిలో సమర్థవంతంగా కమ్యూనికేట్ చేయగలరు

Reason (R): some of the teachers can only communicate in the classroom effectively.

కారణం (R): కొందరు ఉపాధ్యాయులు మాత్రమే తరగతిలో సమర్థవంతంగా కమ్యూనికేట్ చేయగలరు.

Choose the correct answer from the following code:

క్రింది కోడ్ నుండి సరైన సమాధానం ఎంచుకోండి:

Options :

1. ✘ Both (A) and (R) are true but (R) is not the correct explanation of (A)
రెండూ (A) మరియు (R) ఒప్పు కాని (R), (A) యొక్క సరైన వివరణ కాదు

2. ✘ Both (A) and (R) are true and (R) is the correct explanation of (A)
(A) మరియు (R) ఒప్పు మరియు (R), (A) యొక్క సరైన వివరణ

3. ✘ (A) is true, but (R) is false
(A) ఒప్పు, కాని (R) తప్పు

4. ✔ (A) is false, but (R) is true
(A) తప్పు, కాని (R) ఒప్పు

Sub-Section Number :

5

Sub-Section Id :

2702821190

Question Shuffling Allowed :

Yes

Is Section Default? :

null

Question Number : 21 Question Id : 27028216201 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A

Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On

Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :

No

Correct Marks : 2 Wrong Marks : 0

A train of length 100 meters, travelling with speed 45 kmph, taking the time to cross a platform of length 150 meters (in seconds) is .

100 మీటర్ల పొడవు గల రైలు, గంటకు 45 కిలోమీటర్ల వేగంతో ప్రయాణిస్తూ 150 మీటర్ల పొడవైన ప్లాట్‌ఫారమును దాటుటకు పట్ట సమయము

Options :

1. ✓ 20

2. ✗ 15

3. ✗ 10

4. ✗ 5

Question Number : 22 Question Id : 27028216202 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A

Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On

Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :

No

Correct Marks : 2 Wrong Marks : 0

A, B and C can complete a work in 4, 5 and 7 days respectively. Those three combinedly got Rs. 415 for that job, then what is A's share?

ఒక పనిని A, B మరియు C లు వరుసగా 4, 5 మరియు 7 రోజులలో పూర్తిచేయగలవు. వారు ముగ్గురు కలిసి, ఆ పనికి రూ. 415 పొందినచో, A యొక్క వాటా ఎంత ?

Options :

1. ✗ 100

2. ✗ 140

3. ✓ 175

4. ✘ 220

Question Number : 23 Question Id : 27028216203 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

A business man purchasing an article with an amount Rs. 1,200 and sold it for Rs. 1,500. Then the percentage of profit he makes is

ఒక వ్యాపారవేత్త ఒక వస్తువును రూ. 1,200 తో కొని మరియు దానిని రూ. 1,500 కి అమ్మిన, అతనికి లభించిన లాభ శాతం?

Options :

1. ✘ 1.25

2. ✘ 12.5

3. ✓ 25

4. ✘ 300

Question Number : 24 Question Id : 27028216204 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On

Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

A's father's father's only daughter-in-law's brother is related to A is.

A యొక్క తండ్రి, తండ్రి కి ఉన్న ఏకైక కుమార్తె సోదరునికి,, A తో గల సంబంధము

Options :

1. ✘ father
తండ్రి

2. ✔ uncle
మామ

3. ✘ brother in law
బావ / బావ మరిది

4. ✘ brother
సోదరుడు

Question Number : 25 Question Id : 27028216205 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A

Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On

Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

The word 'NAME' is coded as 'MNEA' and 'SOME' is coded as 'MSEO' then the code for 'WARM' in that language is

'NAME' అనే పదం కోడ్ 'MNEA' అని మరియు 'SOME' అనే పదం కోడ్ 'MSEO' అని కోడ్ చేయబడిన, అప్పుడు ఆ భాషలో 'WARM' కొరకు కోడ్

Options :

1. ✔ RWMA

2. ✘ MARW

3. ✘ WARM

4. ✘ ARMW

Sub-Section Number : 6
Sub-Section Id : 2702821191
Question Shuffling Allowed : Yes
Is Section Default? : null

Question Number : 26 Question Id : 27028216206 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

Missing group of letters in the following is
క్రింది క్రమంలో లోపించిన అక్షరాల సమూహం
ERASE : FSBTF :: MAGIC : ?

Options :

1. ✘ NHBJ

2. ✘ NBHGD

3. ✘ NBJHD

4. ✔ NBHJD

Question Number : 27 Question Id : 27028216207 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

The missing number in the sequence: 5, 10, 17, 26, 37, _____ is
అనుక్రమంలో లోపించిన సంఖ్య: 5, 10, 17, 26, 37, _____ .

Options :

1. ✓ 50

2. ✗ 49

3. ✗ 56

4. ✗ 57

Question Number : 28 Question Id : 27028216208 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

The odd one among the following letters is
క్రింది వానిలో నున్న ఒక సరిపోలని అక్షరాలు

Options :

1. ✘ RS

2. ✘ VW

3. ✘ CD

4. ✔ TV

Question Number : 29 Question Id : 27028216209 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

If $W > X > Y$, $Y = U = V$ and $T \leq U \leq S$ then which among the following is correct
 $W > X > Y$, $Y = U = V$ and $T \leq U \leq S$ అయిన, అప్పుడు క్రింది వానిలో ఏది సరియైనది

Options :

1. ✘ $V \geq S$

2. ✘ $W \leq V$

3. ✔ $Y \leq S$

4. ✘ $W = S$

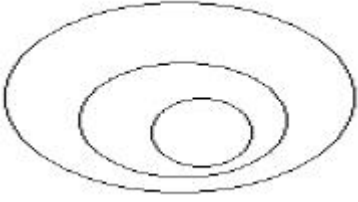
Question Number : 30 Question Id : 27028216210 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

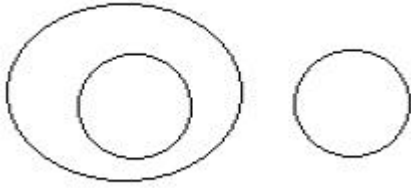
Correct Marks : 2 Wrong Marks : 0

Animals, Cat, Dog : the relation among these terms in venn diagrams is
జంతువులు, పిల్లి, కుక్క : వెన్ రేఖా చిత్రములలో ఈ పదముల మధ్య గల సంబంధము

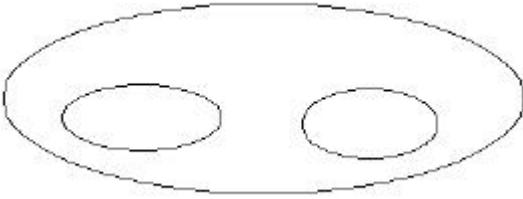
Options :



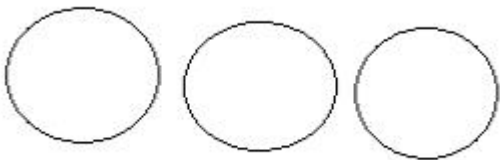
1. ✘



2. ✘



3. ✔



4. ✘

Sub-Section Number :

7

Sub-Section Id :

2702821192

Question Shuffling Allowed :

No

Is Section Default? :

null

Question Id : 27028216211 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Question Numbers : (31 to 35)

Question Label : Comprehension

Note: The questions Q. 31 to Q. 35 are based on the following information.

గమనిక: ప్రశ్నలు Q. 31 నుండి Q. 35 వరకు, క్రింది సమాచారం ఆధారంగా ఉన్నాయి.

The pass percentage of boys and girls and the total number of students in six schools is presented in the following table.

ఆరు పాఠశాలల్లో మొత్తం విద్యార్థుల సంఖ్య మరియు ఉత్తీర్ణత సాధించిన బాలుర మరియు బాలికల సంఖ్యలు, క్రింది పట్టికలో పొందు పరచబడినది.

School పాఠశాల	Boys బాలురు		Girls బాలికలు	
	Total no. of students మొత్తం విద్యార్థుల సంఖ్య	Passed ఉత్తీర్ణత	Total no. of students మొత్తం విద్యార్థుల సంఖ్య	Passed ఉత్తీర్ణత
A	380	266	300	228
B	430	301	330	264
C	400	332	460	414
D	350	273	390	273
E	440	374	440	396
F	350	301	430	344

Sub questions

Question Number : 31 Question Id : 27028216212 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

The percentage girls passed in total students in School A is
పాఠశాల A, లోని మొత్తం విద్యార్థులలో, ఉత్తీర్ణులైన బాలికల శాతము

Options :

1. ✘ 70.00

2. ✘ 76.00

3. ✔ 33.53

4. ✘ 34.74

**Question Number : 32 Question Id : 27028216213 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No**

Correct Marks : 2 Wrong Marks : 0

In which school the number of girls who failed the highest
ఏ పాఠశాల లో అత్యధిక సంఖ్యలో బాలికలు విఫలమైనారు

Options :

1. ✘ F

2. ✔ D

3. ✘ A

4. ✘ B

Question Number : 33 Question Id : 27028216214 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

Out of total number of boys in the given schools, pass percentage of boys is (nearest)
ఇచ్చిన పాఠశాలల్లోని మొత్తం బాలుర సంఖ్యలో, ఉత్తీర్ణత సాధించిన బాలుర శాతం (దగ్గరగా)

Options :

1. ✓ 78.59

2. ✘ 72.54

3. ✘ 76.67

4. ✘ 75.25

Question Number : 34 Question Id : 27028216215 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

Out of total number of girls, in the given schools, total pass percentage of girls is (nearest)
ఇచ్చిన పాఠశాలల్లోని మొత్తం బాలికల సంఖ్యలో, ఉత్తీర్ణత సాధించిన బాలికల శాతం (దగ్గరగా)

Note: For this question, discrepancy is found in

question/answer. Full Marks is being awarded to all candidates.

Options :

1. 78.59
2. 70.62
3. 40.82
4. 31.57

Question Number : 35 Question Id : 27028216216 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

In the given schools, the highest pass percentage of girls is in the school
ಇವುಗಳ ಪಾಠಶಾಲೆಗಳಲ್ಲಿ, ಅತ್ಯಧಿಕ ಡಿಪ್ಲೊಮಾ ಶೇಕಡೆ ಪಡೆದಿರುವ ಬಾಲಕಿಗಳ ಪಾಠಶಾಲೆ

Options :

1. ✓ C
2. ✓ E
3. ✗ D

4. ✘ F

Note: For this question, ambiguity is found in question/answer. Candidate will get full marks for this question if any of the correct options are chosen.

Sub-Section Number : 8
Sub-Section Id : 2702821193
Question Shuffling Allowed : Yes
Is Section Default? : null

**Question Number : 36 Question Id : 27028216217 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No**

Correct Marks : 2 Wrong Marks : 0

The process of dividing the a disk drive into tracks and sectors is called

ఒక డిస్క్ డ్రైవ్ కు ట్రాక్స్ మరియు సెక్టార్స్ గా విభజించడాన్ని ఈ క్రింది విధంగా పిలుస్తారు.

Options :

1. ✘ Tracking
ట్రాకింగ్

2. ✔ Formatting
ఫార్మాటింగ్

3. ✘ Crashing
క్రాసింగ్

4. ✘ Allotting
అలాటింగ్

Question Number : 37 Question Id : 27028216218 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

Von Neumann computer uses the following type of instructions

వాన్ న్యూమెన్ కంప్యూటర్ ఈ తరహా Instructions వాడుతుంది

Options :

1. ✓ SISD

2. ✗ MIMD

3. ✗ MISD

4. ✗ SIMD

Question Number : 38 Question Id : 27028216219 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

Which of the following is not a web browser

ఈ క్రింది వాటిలో ఏది వెబ్ బ్రౌజర్ కాదు

Options :

1. ✗ Internet explorer
ఇంటర్నెట్ ఏక్స్ ప్లోరర్

2. ✘ Firefox
ఫైర్ ఫాక్స్

3. ✘ Chrome
క్రోమ్

4. ✔ Foxpro
ఫాక్స్ ప్రొ

Question Number : 39 Question Id : 27028216220 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

Which of the following domains is used for academic institutions in india?

ఈ క్రింది వాటిలో ఏ డొమైన్ ను భారతదేశంలోని విద్యా సంస్థలకు వాడుతారు

Options :

1. ✘ .net

2. ✘ .edu

3. ✔ .ac

4. ✘ .org

Question Number : 40 Question Id : 27028216221 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

Which of the following domains is used for – profit businesses?

ఈ క్రింది వాటిలో ఏ డొమైన్ లాభాల ఆర్జించే వ్యాపారాలకు వాడతారు

Options :

1. ✘ .net

2. ✘ .edu

3. ✔ .com

4. ✘ .org

Sub-Section Number :

9

Sub-Section Id :

2702821194

Question Shuffling Allowed :

Yes

Is Section Default? :

null

Question Number : 41 Question Id : 27028216222 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A

Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On

Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :

No

Correct Marks : 2 Wrong Marks : 0

Which of the following is responsible of formation of Ozone hole ?

ఓజోన్ రంధ్రము ఏర్పడటానికి ఈ క్రింది వాటిలో ఏది బాధ్యత వహిస్తుంది?

- i. UV radiation
UV వికిరణాలు
- ii. Vortex formation
వర్టెక్స్ ఏర్పడటం
- iii. Very low temperatures in exosphere
ఎక్స్‌స్పియర్ నందు అతి తక్కువ ఉష్ణోగ్రత
- iv. Polar stratosphere clouds
ధృవప్రాంతంలోని స్ట్రాటోస్పియర్ మేఘాలు

Options :

1. ✘ iii

2. ✘ i and iii
i మరియు iii

3. ✘ ii and iii
ii మరియు iii

4. ✔ i, ii and iv
i, ii మరియు iv

Question Number : 42 Question Id : 27028216223 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A

Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On

Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :

No

Correct Marks : 2 Wrong Marks : 0

Which of the following is correct with respect to Nuclear Winter ?
న్యూక్లియర్ (అణు) చలికాలానికి సంబంధించి ఈ క్రింది వాటిలో ఏది సరియైనది?

- i. Reduction in photosynthesis
కిరణ జన్య సంయోగక్రియ తగ్గుట
- ii. Animal starvation
జంతువుల ఆకలి (పస్తుండుట)
- iii. Biodiversity expansion
జీవవైవిధ్య విస్తరణ
- iv. Food supply increase for animals
జంతువులకు అధికంగా ఆహార సరఫరా

Options :

1. ✘ iv

2. ✘ i

3. ✘ iii and iv
iii మరియు iv

4. ✔ i and ii
i మరియు ii

Question Number : 43 Question Id : 27028216224 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

Which one will cause environmental degradation in rural areas ?
గ్రామ ప్రాంతాలలో పర్యావరణం క్షీణించుటకు కారణం ఏది?

Options :

1. ✔

Shifting agriculture

ప్రాంతాన్ని మారుస్తూ సాగు చేయుట

Biodiversity conservation

జీవ వైవిధ్య సంరక్షణ

2. ✘

Afforestation

అడవుల పెంపకం

3. ✘

Integrated agricultural practices

సమగ్ర వ్యవసాయ పద్ధతులు

4. ✘

Question Number : 44 Question Id : 27028216225 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A

Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On

Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :

No

Correct Marks : 2 Wrong Marks : 0

Which is the socio-economic factor that regulates soil degradation ?

ఏ సాంఘిక - ఆర్థిక కారకంచే భూసారము క్షీణించును?

Options :

Farm policies

వ్యవసాయ విధానాలు

1. ✔

Fertilizer usage

ఎరువుల వాడకం

2. ✘

Vegetation protection

వృక్ష సంపద రక్షణ

3. ✘

Population density

4. ✘ జన సాంద్రత

Question Number : 45 Question Id : 27028216226 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

Minimata chemical industry discharges their waste into the sea. Which of the following
is correct ?

మినమాటా రసాయన పరిశ్రమ వ్యర్థాలను సముద్రంలోనికి విడుదల చేయును. దానికి సంబంధించి ఈ క్రింది
వానిలో ఏది సరియైనది?

- i. Mercury is the chief pollutant
పాదరసం ముఖ్య కాలుష్య కారకము
- ii. Death of humans caused due to gases released by the industry.
పరిశ్రమ విడుదలచేసిన వాయువులచే మానవులు మృతి చెందుట
- iii. Bioaccumulation of mercury in the fish
చేపలో పాదరసం జీవ సమీకరణ చెందుట
- iv. Mercury helps fish metabolism
చేప జీవ రసాయన చర్యలో పాదరసం తోడ్పడును

Options :

1. ✘ i

2. ✘ i and ii
i మరియు ii

3. ✔ i and iii
i మరియు iii

4. ✘ ii and iv
ii మరియు iv

Sub-Section Number : 10
Sub-Section Id : 2702821195
Question Shuffling Allowed : Yes
Is Section Default? : null

Question Number : 46 Question Id : 27028216227 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No
Correct Marks : 2 Wrong Marks : 0

Which of the following is the Highest academic decision making body of University?
విశ్వవిద్యాలయానికి సంబంధించిన విద్యాపరమైన అంశాల్లో నిర్ణయాలు తీసుకునే అత్యున్నతమైనది క్రింది వానిలో ఏది?

Options :

1. ✘ Board of studies
బోర్డ్ ఆఫ్ స్టడీస్

2. ✘ Faculty Dean
ఫ్యాకల్టీ డీన్

3. ✔ Academic Council
అకడమిక్ కౌన్సిల్

4. ✘ Head of the department
హెడ్ ఆఫ్ ద డిపార్ట్మెంట్

Question Number : 47 Question Id : 27028216228 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A

Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

Education as a subject of legislation figures in the
శాసనపరమైన అంశాలకు సంబంధించి విద్య దీనికి చెందిన అంశం

Options :

1. ✘ Union List
కేంద్ర జాబితా

2. ✘ State List
రాష్ట్ర జాబితా

3. ✔ Concurrent List
ఉమ్మడి జాబితా

4. ✘ Residuary Powers
అవశేష అధికారాలు

Question Number : 48 Question Id : 27028216229 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

Most prominent role of a teacher in higher education
ఉన్నత విద్య స్థాయిలో ఉపాధ్యాయుని ప్రధాన పాత్ర

Options :

1. ✘ Provide required information to students.
విద్యార్థులకు కావలసిన సమాచారాన్ని అందించడం

2. ✓ Promote self learning in students.
విద్యార్థులలో స్వీయ అభ్యసనాన్ని పెంపొందించడం

3. ✘ Encourage healthy competition among students.
విద్యార్థుల్లో ఆరోగ్యకరమైన పోటీని ప్రోత్సహించడం

4. ✘ Advise students to solve their problems.
విద్యార్థులకు వారి సమస్యలను వారే పరిష్కరించుకోమని సూచన చేయడం

Question Number : 49 Question Id : 27028216230 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

Which of the following statements is NOT correct about distance education in India?
భారతదేశంలో దూరవిద్యకు సంబంధించిన క్రింది ప్రవచనంలో సరికానిది ఏది?

Options :

1. ✘ It supplements formal education wherever required.
అవసరమైన మేరకు నియత విద్యకు అనుసంధానంగా ఉంటుంది

2. ✘ It reduces the cost of education to a great extent.
విద్యా సంబంధమైన ఖర్చును చాలా వరకు తగ్గిస్తుంది

3. ✓ It replaces the formal education shortly.
త్వరలో నియత విద్యాస్థానాన్ని ఆక్రమిస్తుంది

4. ✘

It enhances access to education.

విద్యా అవకాశాల అందుబాటును పెంచును

Question Number : 50 Question Id : 27028216231 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A

Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On

Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :

No

Correct Marks : 2 Wrong Marks : 0

Assessment and accreditation of all technical institutions is in the jurisdiction of
సాంకేతిక విద్యా సంస్థల అంచనా మరియు గుర్తింపు దీని పరిధిలోనికి వస్తుంది.

Options :

1. ✘ UGC
యు.జి.సి.

2. ✘ AICTE
ఎ.ఐ.సి.టి.ఇ.

3. ✔ NAAC
న్యూక్

4. ✘ NCERT
ఎన్.సి.ఇ.ఆర్.టి

MATHEMATICAL SCIENCES

Group Number :

2

Group Id :

270282214

Group Maximum Duration :	120
Group Minimum Duration :	120
Show Attended Group? :	No
Edit Attended Group? :	No
Break time :	0
Group Marks :	200
Is this Group for Examiner? :	No
Examiner permission :	Cant View
Show Progress Bar? :	No

MATHEMATICAL SCIENCES

Section Id :	270282214
Section Number :	1
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	100
Number of Questions to be attempted :	100
Section Marks :	200
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	2702821196
Question Shuffling Allowed :	Yes
Is Section Default? :	null

**Question Number : 51 Question Id : 27028216232 Question Type : MCQ Option Shuffling : No
 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
 Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On**

Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

The partial differential equation

$$y \left(\frac{\partial^2 u}{\partial x^2} \right) + (1 - x^2) \left(\frac{\partial^2 u}{\partial x \partial y} \right) = 0$$

for $(x, y) \in \mathbb{R}^2$, is

Options :

1. ✘ of hyperbolic type at all points in \mathbb{R}^2
2. ✘ of parabolic type at exactly two points in \mathbb{R}^2 and is of hyperbolic type at the rest of the points
3. ✘ of parabolic type at exactly two points in \mathbb{R}^2 , is of elliptic type at infinitely many points, and is of hyperbolic type at infinitely many points
4. ✔ of parabolic type at infinitely many points in \mathbb{R}^2 , and is of hyperbolic type at infinitely many points in \mathbb{R}^2

Question Number : 52 Question Id : 27028216233 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A

Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On

Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

Consider the Cauchy problem for the partial differential equation:

$$u \frac{\partial u}{\partial x} + \frac{\partial u}{\partial y} = 1,$$

with the Cauchy data given by

$$\Gamma : x = s^2, y = 2s, z = h(s), s \in (2, 3),$$

where $h: (2, 3) \rightarrow \mathbb{R}$ is a continuously differentiable function. If the Cauchy problem has a solution, then the function $h(s)$ can NOT be equal to

Options :

1. ✓ s

2. ✗ $2s$

3. ✗ s^2

4. ✗ $2s^3$

Question Number : 53 Question Id : 27028216234 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

Let $u(x, y)$ be the solution of the Cauchy problem given by

$$\begin{aligned} \frac{\partial u}{\partial x} \frac{\partial u}{\partial y} &= 2, \quad (x, y) \in \mathbb{R}^2, \\ u(x, x) &= 3x, \quad x \in \mathbb{R} \end{aligned}$$

and satisfying $\frac{\partial u}{\partial x} \left(\frac{1}{2}, 1 \right) = 2$. Then the value of $u(x, y)$ when $(x, y) = \left(\frac{1}{2}, \frac{1}{4} \right)$ is equal to

Options :

1. ✖ 0.375

2. ✖ 0.75

3. ✔ 1.25

4. ✖ 2.75

Question Number : 54 Question Id : 27028216235 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

Let $u(x, t)$ be the solution to the Initial Boundary value problem given by

$$\begin{aligned}\frac{\partial^2 u}{\partial t^2} &= 4 \frac{\partial^2 u}{\partial x^2}, 0 < x < 4, t > 0, \\ u(0, t) &= u(4, t) = 0, t \geq 0, \\ u_t(x, 0) &= 0, 0 \leq x \leq 4, \\ \text{and } u(x, 0) &= \begin{cases} 0 & 0 < x < 1, \\ (x-1)^3(x-3)^3 & 1 \leq x \leq 3, \\ 0 & 3 < x < 4 \end{cases}\end{aligned}$$

Then the value of $u\left(1, \frac{3}{2}\right)$ is

Options :

1. ✖ -1

2. ✖ -0.5

3. ✓ 0.5

4. ✗ 1

Question Number : 55 Question Id : 27028216236 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

Let $u : \mathbb{R} \times (0, \infty) \rightarrow \mathbb{R}$ be the solution to the initial value problem

$$\begin{aligned} \frac{\partial^2 u}{\partial t^2} &= 16 \frac{\partial^2 u}{\partial x^2}, x \in \mathbb{R}, t > 0, \\ u_t(x, 0) &= 0, x \in \mathbb{R}, \\ \text{and } u(x, 0) &= \begin{cases} 0 & -\infty < x < 0, \\ x^3(x-1)^3 & 0 \leq x \leq 1, \\ 0 & 1 < x < \infty \end{cases} \end{aligned}$$

If S denotes the set $\{\alpha > 0 : u(10, t) = 0 \text{ for all } t \in [0, \alpha]\}$, then which of one of the following statements concerning the set S is TRUE?

Options :

1. ✗ S is a nonempty set and S has no upper bound in \mathbb{R}

2. ✓ Supremum of S is 2.25

3. ✗ Supremum of S is 2.5

4. ✗ S is an empty set

Question Number : 56 Question Id : 27028216237 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

Let Ω denote the set $\{(x, y) \in \mathbb{R}^2 : x^2 + y^2 < 1\}$. Consider the Neumann problem

$$\begin{aligned}\Delta u &= x^2 + y^2 \text{ on } \Omega \\ \frac{\partial u(x, y)}{\partial n} &= x + y + \gamma \text{ for } (x, y) \in \partial\Omega\end{aligned}$$

where n denotes the unit outward normal to $\partial\Omega$, and $\gamma \in \mathbb{R}$. If the given Neumann problem has a solution, then the value of γ is

Options :

1. ✘ $\frac{1}{8\pi}$

2. ✘ $\frac{1}{6\pi}$

3. ✔ $\frac{1}{4}$

4. ✘ $\frac{1}{3}$

Question Number : 57 Question Id : 27028216238 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

Let $u(x, t)$ be the solution to the Initial Boundary value problem given by

$$\begin{aligned}\frac{\partial u}{\partial t} &= 4\frac{\partial^2 u}{\partial x^2}, 0 < x < 1, t > 0, \\ \frac{\partial u}{\partial x}(0, t) &= \frac{\partial u}{\partial x}(1, t) = 0, t \geq 0, \\ u(0, t) &= \cos(2\pi x), 0 \leq x \leq 1,\end{aligned}$$

Then the value of $u\left(1, \frac{1}{8\pi}\right)$ is

Note: For this question, discrepancy is found in question/answer. Full Marks is being awarded to all candidates.

Options :

1. $e^{-8\pi}$
2. e^{-8}
3. $e^{-2\pi}$
4. e^{-2}

Question Number : 58 Question Id : 27028216239 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

The numerical integration formula $\int_{-1}^1 f(x) dx \approx \frac{f(0)}{2} [f(0)^2 + f(1)^2]$

Options :

1. ✘ is exact for every polynomial of degree less than or equal to 1
2. ✘ is exact for every polynomial of degree 2
3. ✘ is exact for every polynomial of degree 3
4. ✔ is NOT exact for some polynomial of degree 1

Question Number : 59 Question Id : 27028216240 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

Bisection method is applied, on the interval $[-2.4, 2.4]$ to find a solution of

$$(x - 0.2)(x - 0.45)(x - 0.75)(x - 1.25)(x - 1.9) = 0$$

Then the iterative sequence generated by the bisection method converges to

Options :

1. ✘ 0.45
2. ✔ 0.75
3. ✘ 1.25

4. ✘ 1.9

Question Number : 60 Question Id : 27028216241 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

Let (x_n, y_n) denote the iterative sequence generated by the Gauss-Seidal method that converges to the solution of the linear system $x - 2y = 1$, $2x - y = 3$, starting from the initial vector $(x_0, y_0) = (1, 2)$. Then the iterate (x_1, y_1) is given by

Options :

1. ✘ (2.5, 0.75)

2. ✔ (5, -1)

3. ✘ (1.5, 0.25)

4. ✘ (5, 7)

Question Number : 61 Question Id : 27028216242 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

Dimension of the vector subspace $W = \left\{ \begin{pmatrix} a & b \\ c & d \end{pmatrix} \mid b = c, \operatorname{tr}(A) = 0 \right\}$ of $M_2(\mathbb{C})$ is

Options :

1. ✘ 1

2. ✔ 2

3. ✘ 3

4. ✘ 4

Question Number : 62 Question Id : 27028216243 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A

Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On

Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :

No

Correct Marks : 2 Wrong Marks : 0

Let $T, S : \mathbb{R}^3 \rightarrow \mathbb{R}^4$ be two linear transformations. Then which of the following statements is true?

Note: For this question, discrepancy is found in question/answer. Full Marks is being awarded to all candidates.

Options :

1. T can be surjective

2. T has to be injective
3. $\text{rank}(ST) = \text{rank}(T)$
4. If $\text{rank}(T^2) = \text{rank}(T)$, then $\text{Im}(T) \cap \text{Ker}(T) = 0$

**Question Number : 63 Question Id : 27028216244 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No**

Correct Marks : 2 Wrong Marks : 0

Let $A \in M_4(\mathbb{R})$ be an invertible matrix. Then which of the following statements is **NOT** true?

Options :

1. ✘ $\text{rank}(A) = 4$
2. ✔ 0 is an eigen value of A
3. ✘ $\dim(\text{Nullspace}(A)) = 0$
4. ✘ For every $b \in \mathbb{R}^4$, the system of equations $AX = b$ has unique solution

**Question Number : 64 Question Id : 27028216245 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On**

Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

Let $A \in M_4(\mathbb{C})$ be a matrix such that $A^3 = -I$. Then which of the following statements is NOT true?

Options :

1. ✘ A has three distinct eigenvalues

2. ✘ A is diagonalizable over \mathbb{C}

3. ✔ A is diagonalizable over \mathbb{R}

4. ✘ A is non-singular

Question Number : 65 Question Id : 27028216246 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

A linear operator T on a complex vector space V has a characteristic polynomial $(X - 2)^3(X - 8)^2$ and minimal polynomial $(X - 2)^2(X - 8)$. Then which of the following statements is NOT true?

Options :

1. ✘ $\dim(V) = 5$

2. ✘ Jordan form is uniquely determined by the given information

3.

✓ There are exactly two Jordan blocks in the Jordan decomposition of T

4. ✘ Eigen values of T are 0, 2 and 8

Question Number : 66 Question Id : 27028216247 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

Number of integral solutions of the following equation $x_1 + x_2 + x_3 + x_4 = 30$ where
 $x_1 \geq 2, x_2 \geq 3, x_3 \geq -5$ and $x_4 \geq 8$

Options :

1. ✘ $\binom{33}{3}$

2. ✘ $\binom{17}{3}$

3. ✓ $\binom{25}{3}$

4. ✘ $\binom{22}{3}$

Question Number : 67 Question Id : 27028216248 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On

Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

Let p be a prime and let G denote the group $GL_2(\mathbb{Z}/(p\mathbb{Z}))$, which is the group of 2×2 matrices with entries from the group $\mathbb{Z}/(p\mathbb{Z})$. What is the order of G ?

Options :

1. ✓ $p(1-p)^2(p+1)$

2. ✗ p

3. ✗ p^2

4. ✗ $p^2(p-1)$

Question Number : 68 Question Id : 27028216249 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

Upto isomorphism, number of abelian groups of order 56 is

Options :

1. ✗ 1

2. ✗ 2

3. ✓ 3

4. ✘ 4

Question Number : 69 Question Id : 27028216250 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

Let G be a simple group of order 60, and let H be the finite Abelian group with $\varphi : G \rightarrow H$
be a non-trivial group homomorphism. Then the order of H can be

Options :

1. ✘ 30

2. ✔ 120

3. ✘ 36

4. ✘ 90

Question Number : 70 Question Id : 27028216251 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

Let G be a simple group with order 216. Number of subgroups of order 27 can be

Options :

1. ✓ 0

2. ✘ 8

3. ✘ 7

4. ✘ 4

**Question Number : 71 Question Id : 27028216252 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No**

Correct Marks : 2 Wrong Marks : 0

Let $F = \mathbb{Z}/(2\mathbb{Z})$. Number of elements in the ring $F[X]/(X^2 + 1)$ is

Options :

1. ✘ 1

2. ✘ 2

3. ✘ 3

4. ✓ 4

**Question Number : 72 Question Id : 27028216253 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A**

Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

Number of units in the ring $\mathbb{Z}/4\mathbb{Z} \times \mathbb{Z}/6\mathbb{Z}$ is

Options :

1. ✘ 2

2. ✔ 4

3. ✘ 6

4. ✘ 3

Question Number : 73 Question Id : 27028216254 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A

Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On

Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

Let $R := \mathbb{Z}/6\mathbb{Z}$ be a ring. Number of non-zero nilpotent elements in the quotient ring $R[X]/(X^2)$ is

Options :

1. ✔ 5

2. ✘ 6

3. ✘ 11

4. ✘ 12

Question Number : 74 Question Id : 27028216255 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

Which of the following series converges?

Options :

1. ✘
$$\sum_{n=1}^{\infty} \frac{e^n}{e^n + n}$$

2. ✔
$$\sum_{n=1}^{\infty} \frac{(n+1)^n}{n^{n+2}}$$

3. ✘
$$\sum_{n=1}^{\infty} \frac{(n+1)^n}{n^{n+1}}$$

4. ✘
$$\sum_{n=1}^{\infty} \frac{n(\sqrt[3]{1+n} - \sqrt[3]{n})}{n+1}$$

Question Number : 75 Question Id : 27028216256 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :

No

Correct Marks : 2 Wrong Marks : 0

Let $f : \mathbb{R} \rightarrow \mathbb{R}$ be a continuous map. Then which of the following statements is true?

Options :

1. ✓ If f is periodic then f is uniformly continuous
2. ✗ If f is bounded then f is uniformly continuous
3. ✗ If f is differentiable then f is uniformly continuous
4. ✗ If $\lim_{x \rightarrow \infty} f(x)$ is in \mathbb{R} then f is uniformly continuous

Question Number : 76 Question Id : 27028216257 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A

Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On

Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :

No

Correct Marks : 2 Wrong Marks : 0

Let $f_n : [-1, 1] \rightarrow \mathbb{R} \forall n \in \mathbb{N}$ and $f : [-1, 1] \rightarrow \mathbb{R}$. Assume that $f_n \rightarrow f$ uniformly. Then which of the following statements is true?

Options :

1. ✗ If each $f_n \in C^1$ then $f \in C^1$
2. ✗ If each f_n is discontinuous then f is discontinuous
3. ✗ If $f_n(x) \neq 0 \forall n \in \mathbb{N}, x \in [-1, 1]$ then f has almost finitely many zeros in $[-1, 1]$

4. ✓ If $(x_n) \rightarrow x$ in $[-1, 1]$ then $(f_n(x_n)) \rightarrow f(x)$

Question Number : 77 Question Id : 27028216258 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

Which of the following series is uniformly convergent?

Options :

1. ✗ $\sum_{n=1}^{\infty} \frac{x^2}{(1+x^2)^n}$ over $[-1, 1]$

2. ✗ $\sum_{n=1}^{\infty} (-1)^n \left(\frac{x^2 + n}{n} \right)$ over \mathbb{R}

3. ✓ $\sum_{n=1}^{\infty} \frac{\sin(nx)}{1+n^2}$ over \mathbb{R}

4. ✗ $\sum_{n=1}^{\infty} \frac{x^n}{1+x^n}$ over $[-1, 1]$

Question Number : 78 Question Id : 27028216259 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

Let $f, g : [-1, 1] \rightarrow \mathbb{R}$ be such that $f(x) = \lim_{n \rightarrow \infty} \cos^{2n}(24\pi x)$,

$$g(x) = \begin{cases} 0 & \text{if } x \in [-1, 1] - \mathbb{Q} \text{ or } x = 0 \\ \cos\left((2q+1)\frac{\pi}{2}\right) & x = \frac{p}{q}, p \text{ and } q \text{ are coprime, } p > 0 \end{cases}$$

Options :

1. ✓ both f and g are Reimann integrable
2. ✗ only f is Reimann integrable but not g
3. ✗ only g is Reimann integrable but not f
4. ✗ neither f nor g is Reimann integrable

Question Number : 79 Question Id : 27028216260 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A

Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On

Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :

No

Correct Marks : 2 Wrong Marks : 0

Let $m(E)$ denote the Lebesgue measure of the measurable subset E of \mathbb{R} . Then which of the following statements is true?

Options :

1. ✗ If $m(E) > 0, E \subseteq [0, 1]$ then $\exists a, b \in [0, 1] a \neq b$ and $(a, b) \subset E$
2. ✗ If $m(E) = 0$ then E is countable
3. ✗ If $m(E) = 0$ then E is uncountable

4. ✓ If $m(E) = 1$ then there exists a compact set K such that $m(E \setminus K) < \frac{1}{100}$

**Question Number : 80 Question Id : 27028216261 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No**

Correct Marks : 2 Wrong Marks : 0

Let $f : \mathbb{R} \rightarrow \mathbb{R}$ be a function. Then which of the following statements is true?

Options :

1. ✓ $\sin(f)$ is a measurable map if f is a measurable map
2. ✗ If range of f is a finite set then f is a measurable map
3. ✗ If f is monotonic, $f = 0$ almost everywhere then f is constant almost everywhere
4. ✗ If f is measurable then there exists a polynomial P such that $P(f)$ is not measurable

**Question Number : 81 Question Id : 27028216262 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No**

Correct Marks : 2 Wrong Marks : 0

Let $f : \mathbb{R} \rightarrow \mathbb{R}$ be a C^1 map with $f'(0) = 0$ and $g : \mathbb{R}^2 \rightarrow \mathbb{R}$ be a non constant map such that $g(x, y) = f\left(\sqrt{x^2 + y^2}\right)$, $(x, y) \in \mathbb{R}^2$. Then which of the following statements is FALSE?

Options :

1. ✓ If g is differentiable at $(0, 0)$ then $f'(0) = 0$
2. ✗ $\frac{\partial g}{\partial x}$ is continuous at $(0, 0)$
3. ✗ $\frac{\partial g}{\partial y}$ is continuous at $(0, 0)$
4. ✗ directional derivative of g at $(0, 0)$ exists in every direction

Question Number : 82 Question Id : 27028216263 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

Let $f : \mathbb{R}^2 \rightarrow \mathbb{R}^2$ be given by $\bar{f}(x, y) = (\sin^2 x + \sin^2 y, 2 \sin x + \cos^2 y)$, $(x, y) \in \mathbb{R}^2$.

Notice that $\bar{f}\left(\frac{\pi}{4}, \frac{\pi}{4}\right) = \left(1, \frac{1 + 2\sqrt{2}}{2}\right)$. Assume that \bar{g} is the inverse of \bar{f} defined on a

neighbourhood U of $\left(1, \frac{1 + 2\sqrt{2}}{2}\right)$ given by the inverse function theorem, $\bar{f}(\bar{g}(u, v)) =$

$(u, v), \forall u, v \in U$. Then the derivative of \bar{g} at $\left(1, \frac{1 + 2\sqrt{2}}{2}\right)$ is given by the matrix

Options :

1. ✗ $\begin{pmatrix} 0 & \frac{1}{2} \\ -1 & 0 \end{pmatrix}$

2. ✘ $\begin{pmatrix} 0 & -\frac{1}{2} \\ 1 & 0 \end{pmatrix}$

3. ✘ $\begin{pmatrix} 0 & -\frac{1}{2} \\ -1 & 0 \end{pmatrix}$

4. ✔ $\frac{1}{1+\sqrt{2}} \begin{pmatrix} 1 & 1 \\ \sqrt{2} & -1 \end{pmatrix}$

**Question Number : 83 Question Id : 27028216264 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No**

Correct Marks : 2 Wrong Marks : 0

Maximun of $x^2 + y^2 + z^2$ subject to $(x - 1)^2 + (y - 1)^2 + 9z^2 = 36$ is

Options :

1. ✘ $19 - 6\sqrt{2}$

2. ✘ $19 + 6\sqrt{2}$

3. ✘ $\frac{15}{4}$

4. ✔ $38 + 12\sqrt{2}$

Question Number : 84 Question Id : 27028216265 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

Let $(C[0, 1], \| \cdot \|_{\infty})$ be the normed linear space of all real valued continuous maps on $[0, 1]$ with $\|f\|_{\infty} = \sup_{x \in [0, 1]} |f(x)|$, and $(C^1[0, 1], \| \cdot \|_{1, \infty})$ the normed linear space of all real valued continuously differentiable maps on $[0, 1]$ with $\|f\|_{1, \infty} = \sup_{x \in [0, 1]} |f(x)| + \sup_{x \in [0, 1]} |f'(x)|$, $f \in C^1[0, 1]$. Then which of the following statements is true?

Options :

1. ✘ $\left\{ f \in C[0, 1] : \int_0^1 f(x) dx = 1 \right\}$ is compact in $(C[0, 1], \| \cdot \|_{\infty})$

2. ✘ $\{f \in C^1[0, 1] : \|f\|_{\infty} = 1\}$ is compact in $(C[0, 1], \| \cdot \|_{\infty})$

3. ✔ $\{f \in C^1[0, 1] : \|f\|_{1, \infty} = 1\}$ is compact in $(C[0, 1], \| \cdot \|_{\infty})$

4. ✘ $\{f \in C^1[0, 1] : \|f\|_{1, \infty} = 1\}$ is compact in $(C^1[0, 1], \| \cdot \|_{1, \infty})$

Question Number : 85 Question Id : 27028216266 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

Let S denote the set of all $n \times n$ real symmetric matrices. Consider two metrics in S given by $d_1(A, B) = \max_{1 \leq j \leq n} \left\{ \sum_{j=1}^n |a_{ij} - b_{ij}| \right\}$ and $d_2(A, B) = \max \{ |\lambda| : \lambda \text{ is an eigenvalue of } A - B \}$, $A, B \in S$. Then which of the following statements is true?

Options :

1. ✓ Both d_1 and d_2 are induced by a norm on S
2. ✗ Only d_1 but not d_2 is induced by a norm on S
3. ✗ Only d_2 but not d_1 is induced by a norm on S
4. ✗ Neither d_1 nor d_2 are induced by a norm on S

Question Number : 86 Question Id : 27028216267 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

Consider \mathbb{R}^2 with usual topology. Let $A = \{(x, y) \in \mathbb{R}^2 : y = 2x\} \setminus \{(0, 0)\}$. Then A is

Options :

1. ✗ open
2. ✗ closed
3. ✗ connected

4. ✓ nowhere dense

Question Number : 87 Question Id : 27028216268 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

Let (X, d) be a metric space. For $A, B \subseteq X$ define $d(A, B) := \inf\{d(a, b) : a \in A, b \in B\}$, assume that $A \cap B = \emptyset$. Then which of the following statement is true?

Options :

1. ✘ If A and B are open then $d(A, B) > 0$
2. ✘ If A and B are closed then $d(A, B) > 0$
3. ✓ If A and B are compact then $d(A, B) > 0$
4. ✘ If A and B are connected then $d(A, B) > 0$

Question Number : 88 Question Id : 27028216269 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

Consider the statements:

S_1 : There exists a metric d on \mathbb{R} such that (\mathbb{R}, d) is compact.

S_2 : There exists a topology τ on \mathbb{R} such that (\mathbb{R}, τ) is totally disconnected.

Then

Options :

1. ✓ both S_1 and S_2 are true

2. ✗ S_1 is true and S_2 is false

3. ✗ S_1 is false and S_2 is true

4. ✗ both S_1 and S_2 are false

Question Number : 89 Question Id : 27028216270 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A

Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On

Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :

No

Correct Marks : 2 Wrong Marks : 0

Let (X, τ) be a topological space. Let $Y \subseteq X$ then which of the following statements is true?

Options :

1. ✗ If Y is locally connected then Y is connected

2. ✗ If Y is path connected then Y is locally connected

3. ✗ If Y is path connected then Y is locally path connected

4. ✓ If \tilde{Y} is open and connected subset of \mathbb{R}^n then \tilde{Y} is path connected

Question Number : 90 Question Id : 27028216271 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

Which of the following statements is false?

Options :

1. ✗ Every metric space is normal
2. ✓ If (X, τ) is normal then $X \times X$ is normal with product topology
3. ✗ If (X, τ) is normal and $Y \subset X$ is closed then Y is normal for induced topology
4. ✗ If (X, τ) is normal with at least two distinct elements then there exists $f : X \rightarrow \mathbb{R}$ such that f is non-constant and continuous

Question Number : 91 Question Id : 27028216272 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

If $C : |z| = 5$ is the circle positively oriented, then $\int_C \frac{\cosh z}{\sinh z - i} dz =$

Options :

1. ✘ $2\pi i$

2. ✔ $4\pi i$

3. ✘ $6\pi i$

4. ✘ $8\pi i$

Question Number : 92 Question Id : 27028216273 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

Let $f(z) = z^2 \sinh z$ then $f^{(2021)}(0) =$

Options :

1. ✔ 2020×2021

2. ✘ 2021×2022

3. ✘ 2020×2023

4. ✘ 2021×2023

Question Number : 93 Question Id : 27028216274 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

Let R be the closed triangular region with vertices at $-1, 2, 2 + 2i$. If $f(z) = (2z + 1)^3$
then $\max_{z \in R} |f(z)| =$

Options :

1. ✘ $41\sqrt{40}$

2. ✘ $40\sqrt{41}$

3. ✘ $4\sqrt{41}$

4. ✔ $41\sqrt{41}$

Question Number : 94 Question Id : 27028216275 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

Suppose f is analytic on $|z| < 2$ and $f\left(\frac{1}{2n+1}\right) = 0$ for all $n \in \mathbb{N}$. Then the number
of such functions is

Options :

1. ✘ 0

2. ✓ 1

3. ✗ 2

4. ✗ ∞

Question Number : 95 Question Id : 27028216276 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

If $C : |z| = 1$ is the circle positively oriented, then $\int_C \frac{dz}{z^2(e^z - 1)} =$

Options :

1. ✗ πi

2. ✗ $\frac{\pi i}{2}$

3. ✗ $\frac{\pi i}{3}$

4. ✓ $\frac{\pi i}{6}$

Question Number : 96 Question Id : 27028216277 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A

Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

Consider the functions $y_1(x) = x^3, y_2 = |x|x^2$ on $[-1, 1]$. Then

Options :

1. ✘ the Wronskian $W(y_1, y_2)$ does not vanish

2. ✘ they are solutions of ODE of the form $y'' + P(x)y' + Q(x)y = 0$ where P and Q are polynomials

3. ✘ y_1 and y_2 are linearly dependent on $[-1, 1]$

4. ✔ $y_1 = cy_2$ for $x \geq 0$ and y_1, y_2 are independent on $[-1, 1]$

Question Number : 97 Question Id : 27028216278 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A

Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

Consider the ordinary differential equation (ODE): $(y^2 + xy + 1) dx + (x^2 + xy + 1) dy = 0$. It has an integrating factor of the form $\phi(s), s = xy$, then $\phi(s)$ is

Options :

1. ✘ $\log s$

2. ✘ s

3. ✘ e^{-s^2}

4. ✔ e^s

Question Number : 98 Question Id : 27028216279 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

Let the solution of $4x^2y'' + 4xy' + (4x^2 - 1)y = 0$ be of the form $y = uv$. Then a choice
 u for which v satisfies $v'' + v' = 0$ is

Options :

1. ✘ \sqrt{x}

2. ✔ $\frac{1}{\sqrt{x}}$

3. ✘ $e^{\sqrt{x}}$

4. ✘ $\frac{1}{2} \log x$

Question Number : 99 Question Id : 27028216280 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

Consider the system

$$\begin{aligned}\frac{dx}{dt} &= -3x^3 - y, \\ \frac{dy}{dt} &= x^5 - 2y^3\end{aligned}$$

then

Options :

1. ✓ $(x(t), y(t)) \rightarrow (0, 0)$ as $t \rightarrow \infty$
2. ✗ $(x(t), y(t)) \rightarrow (\infty, \infty)$ as $t \rightarrow \infty$
3. ✗ $(x(t), y(t)) \rightarrow (0, \infty)$ as $t \rightarrow \infty$
4. ✗ $(x(t), y(t)) \rightarrow (\infty, 0)$ as $t \rightarrow \infty$

Question Number : 100 Question Id : 27028216281 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

Let y be a non-trivial solution of $x^2 y'' + xy' + \left(x^2 - \frac{1}{4}\right)y = 0$ then

Options :

1. ✗ The distance between two successive zeros is more than π
2. ✗ The distance between two successive zeros is less than $\frac{\pi}{2}$

3. ✓ The distance between two successive zeros is π
4. ✘ The distance between two successive zeros tends to zero as $x \rightarrow \infty$

Question Number : 101 Question Id : 27028216282 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

Let $G(x, \xi)$ be a Green function of the BVP

$$p(x)y'' + q(x)y' + r(x)y = s(x)$$

on $[a, b]$, $y(a) = y(b) = 0$. Then

Options :

1. ✘ $G(x, \xi)$ is discontinuous on $x = \xi$
2. ✘ $G(x, \xi) \neq G(\xi, x)$
3. ✓ The corresponding homogeneous BVP equation has only a trivial solution
4. ✘ $G(x, \xi)$ need not be unique

Question Number : 102 Question Id : 27028216283 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On

Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

A particle is constrained to move two dimensionally on a smooth plane making an angle α to the horizontal plane. Let x -axis be the line common to inclined plane and horizontal plane. Let a line on inclined plane which is perpendicular to x -axis be y -axis. Then Lagrangian is

Note: For this question, discrepancy is found in question/answer. Full Marks is being awarded to all candidates.

Options :

1. $\frac{1}{2}m(\dot{x}^2 + \dot{y}^2) - mgy \sin \alpha$

2. $\frac{1}{2}m(\dot{x}^2 + \dot{y}^2) - mgy \cos \alpha$

3. $\frac{1}{2}m(\dot{x}^2 + \dot{y}^2) - mgx \sin \alpha$

4. $\frac{1}{2}m(\dot{x}^2 + \dot{y}^2) - mgx \cos \alpha$

Question Number : 103 Question Id : 27028216284 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A

Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On

Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

Consider the following statements.

S_1 : The transformation $P = \frac{1}{2}(p^2 + q^2), Q = \tan^{-1} \left(\frac{q}{p} \right)$ is canonical.

S_2 : The transformation $P = q \cot p, Q = \log \left(\left(\frac{1}{q} \right) \sin p \right)$ is canonical.

Then

Options :

1. ✓ both S_1 and S_2 are true
2. ✗ both S_1 and S_2 are false
3. ✗ S_1 is true but S_2 is false
4. ✗ S_1 is false but S_2 is true

Question Number : 104 Question Id : 27028216285 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A

Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On

Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :

No

Correct Marks : 2 Wrong Marks : 0

The Hamiltonian for the Lagrangian $L(x, y) = \dot{x}^2 + fx^2 - g\dot{x}\dot{y}$ is

Options :

1. ✗ $\frac{p_y}{g} \left(p_x - \frac{p_y}{g} \right) - fx^2$
2. ✗ $\frac{p_y}{g} \left(p_x + \frac{p_y}{g} \right) - fx^2$

3. ✘ $-\frac{p_y}{g} \left(p_x - \frac{p_y}{g} \right) - f x^2$

4. ✔ $-\frac{p_y}{g} \left(p_x + \frac{p_y}{g} \right) - f x^2$

Question Number : 105 Question Id : 27028216286 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

Let ϕ be a solution of $\int_0^x e^{2(x-t)} \phi(t) dt = \sin x$. Then

Options :

1. ✔ $\phi\left(\frac{\pi}{4}\right) = -\frac{1}{\sqrt{2}}$ and $\phi\left(\frac{\pi}{2}\right) = -2$

2. ✘ $\phi\left(\frac{\pi}{4}\right) = \frac{1}{\sqrt{2}}$ and $\phi\left(\frac{\pi}{2}\right) = 2$

3. ✘ $\phi\left(\frac{\pi}{4}\right) = -\frac{1}{\sqrt{2}}$ and $\phi\left(\frac{\pi}{2}\right) = 2$

4. ✘ $\phi\left(\frac{\pi}{4}\right) = \frac{1}{\sqrt{2}}$ and $\phi\left(\frac{\pi}{2}\right) = -2$

Question Number : 106 Question Id : 27028216287 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

The integral solution $\phi(x) + \lambda \int_0^{\pi} \sin(x)\phi(t) dt = f(x)$ has a solution when

Options :

1. ✓ $f(x) = \sin(4x)$

2. ✗ $f(x) = \cos(4x)$

3. ✗ $f(x) = x \cos(4x)$

4. ✗ $f(x) = x \sin(4x)$

Question Number : 107 Question Id : 27028216288 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

The number of solutions of the integral equation

$$\phi(x) + \frac{3}{4} \int_{-1}^1 x^2 - 2xt\phi(t) dt = x^3 - x$$

is

Note: For this question, discrepancy is found in question/answer. Full Marks is being awarded to all candidates.

Options :

1. 0
2. 1
3. countably infinite
4. uncountably infinite

Question Number : 108 Question Id : 27028216289 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

Consider the following statements.

S_1 : If a functional is continuous at any function in the sense of 5th order proximity, then it will be continuous in the sense of n^{th} order proximity if $n < 5$ for $n \in \mathbb{N}$.

S_2 : The functional has an extremum if and only if second variation of that functional is zero.

Then

Options :

1. ✘ both S_1 and S_2 are true

2. ✓ both S_1 and S_2 are false

3. ✘ S_1 is true but S_2 is false

4. ✘ S_1 is false but S_2 is true

Question Number : 109 Question Id : 27028216290 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

The functional $\int_a^b y^2 dx$ is

Options :

1. ✓ continuous at every $y \in C([a, b])$

2. ✘ continuous only at $y = \sin x$

3. ✘ continuous only at $y = \cos x$

4. ✘ not continuous at any $y \in C([a, b])$

Question Number : 110 Question Id : 27028216291 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A

Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

Area of the surface obtained by rotation of a given curve $y = y(x)$, $x \in [a, b]$ about the axis of abscissa is

Options :

1. ✓ $2\pi \int_a^b y \sqrt{1 + (y')^2} dx$

2. ✗ $2\pi \int_a^b y^2 \sqrt{1 + (y')^2} dx$

3. ✗ $2\pi \int_a^b y (1 + (y')^2) dx$

4. ✗ $2\pi \int_a^b y^2 (1 + (y')^2) dx$

Question Number : 111 Question Id : 27028216292 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

For a distribution the first four moments about $x = 4$ are 0, 2, 0 and 11. Then its fourth central moment is

Options :

1. ✓ 11

2. ✗ 2

3. ✗ 0

4. ✗ 2.75

Question Number : 112 Question Id : 27028216293 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

A teacher returns the corrected assignments of 10 students in a class. The probability for none of the students receive their own assignments is

Note: For this question, discrepancy is found in question/answer. Full Marks is being awarded to all candidates.

Options :

1. $1 - \left[\frac{1}{10}\right]^{10}$

2. $\sum_{k=1}^{10} \frac{(-1)^k}{k!}$

3. $10! \left[1 - \sum_{k=2}^{10} \frac{(-1)^k}{k!} \right]$

4. 0.468

Question Number : 113 Question Id : 27028216294 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

Let U_1, U_2, \dots be independent Uniform $[0, 1]$ random variables and let $N = \min\{n \geq 2; U_n > U_{n-1}\}$ is the index of the first uniform random variable that is larger than its immediate predecessor, and $M = \min\{n \geq 1; U_1 + U_2 + \dots + U_n > 1\}$ is the number of uniform random variables sum to exceed 1. If N and M have the same probability distribution, then their common mean $E[M] = E[N]$ is

Options :

1. ✘ $\frac{1}{n}$

2. ✘ $\frac{1}{n!}$

3. ✔ e

4. ✘ e!

Question Number : 114 Question Id : 27028216295 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

Suppose that the amount of time one spends in a bank is exponentially distributed with mean ten minutes. What is the probability that a customer will spend more than fifteen minutes in the bank? What is the probability that a customer will spend more than fifteen minutes in the bank given that she is still in the bank after ten minutes?

Options :

1. ✘ 0.100, 0.500

2. ✘ 0.120, 0.514

3. ✔ 0.220, 0.604

4. ✘ 0.327, 0.784

Question Number : 115 Question Id : 27028216296 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

Let $\{X_n, n \geq 1\}$ be a sequence of independent random variables with $E[X_k] = \mu_k$ and

$V[X_k] = \sigma_k^2$ and $E[|X_k - \mu_k|^3] < \infty \forall k = 1, 2, \dots$. Let $S_n = \sum_{k=1}^n X_k$, $E[S_n] = \sum_{k=1}^n \mu_k = \mu$; $V(S_n)$

$= \sum_{k=1}^n \sigma_k^2 = \sigma^2$. The central limit theorem (CLT) applied for the sequence is

Options :

1. ✘ Laplace CLT
2. ✘ Lindberg Levy CLT
3. ✘ Lindberg Feller CLT
4. ✔ Liapunov CLT

Question Number : 116 Question Id : 27028216297 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

Let $\{X_n, n \geq 1\}$ be a sequence of independent and identically distributed random variables

with the density function $f(x) = \frac{1+\delta}{x^{2+\delta}}$, if $x \geq 1, \delta > \frac{1}{2}$. The sequence

Options :

1. ✘ converges in Probability
2. ✘ converges in almost sure
3. ✘ converges in quadratic mean
4. ✔ does not converge in any above mode

Question Number : 117 Question Id : 27028216298 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

Among the following, which is a characteristic function

Options :

1. ✘ $[1+t^{2k}]^{-1}$

2. ✔ $[2e^{-it}-1]^{-1}$

3. ✘ $e^{-|t|^n}$

4. ✘ $e^{-|t|^4}$

Question Number : 118 Question Id : 27028216299 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

If X follows $U [0, 12]$ then $P[| X - 6 | > 4] \leq$

Options :

1. ✔ 0.75

2. ✘ 0.3334

3. ✘ 0.25

4. ✘ 0.7776

Question Number : 119 Question Id : 27028216300 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

If $f(x) = \frac{1}{2} \lambda e^{-\lambda|x-\mu|}$, $-\infty < x < \infty$, $\lambda > 0$, $\mu < \infty$ then its moment generating function is

Options :

1. ✘ $\frac{1}{[1-t^2]}$

2. ✘ $\frac{1}{[1-(\frac{t}{\lambda})^2]}$

3. ✔ $\frac{e^{\mu t}}{[1-(\frac{t}{\lambda})^2]}$

4. ✘ $\frac{e^{\lambda \mu t}}{[1+(\frac{t}{\lambda})^2]}$

Question Number : 120 Question Id : 27028216301 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

Let the random variables X and Y are i.i.d. standard Cauchy variates, then the probability density function of $U = XY$ is

Options :

1. ✓ $\frac{2 \log |u|}{\pi^2 (u^2 - 1)}$

2. ✗ $\frac{1}{\pi (1 + u^2)}$

3. ✗ $\frac{1}{2} e^{-|u|}$

4. ✗ e^{-u}

Question Number : 121 Question Id : 27028216302 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

The joint density function of the random variables X and Y is $f(x, y) = 4xy e^{-(x^2+y^2)}$, $x, y \geq 0$.

Then the distribution of the random variable $U = \sqrt{X^2 + Y^2}$ is $f(u) =$

Options :

1. ✘ $4u^2 e^{-u^2}$

2. ✔ $2u^3 e^{-u^2}$

3. ✘ $2u^3 e^{u^2}$

4. ✘ $4u^2 e^{-u^2}$

Question Number : 122 Question Id : 27028216303 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

X_1, X_2, \dots, X_n be an i.i.d. random variables follows Weibull distribution then the distribution of $y = \text{Min}\{X_1, X_2, \dots, X_n\}$ is

Options :

1. ✘ Pareto

2. ✘ Beta distribution of first kind

3. ✔ Weibull

4. ✘ Log normal

Question Number : 123 Question Id : 27028216304 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

Let $y_{(1)} < y_{(2)} < y_{(3)}$ be the order statistics of a random sample of size 3 drawn from an exponential distribution with parameter 1. Then the distribution function of second ordered statistics, $f(y_{(2)}) =$

Options :

1. ✘ $3! (1 - e^{-y})$
2. ✘ $3! e^{-2y}$
3. ✘ $3 e^{-2y}(1 - e^{-y})$
4. ✔ $3! e^{-2y}(1 - e^{-y})$

Question Number : 124 Question Id : 27028216305 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

Let T_n and T'_n are two tests satisfying the regularity conditions. In the usual notation, the Pitman's asymptotic relative efficiency. ARE $[T_n, T'_n]$ is

Options :

1. ✘ $\frac{E[T_n]}{E[T'_n]}$

2. ✘ $1 - \frac{E[T'_n]}{E[T_n]}$

3. ✔ $\lim_{n \rightarrow \infty} \frac{E[T_n]}{E[T'_n]}$

4. ✘ $1 - \lim_{n \rightarrow \infty} \frac{E[T'_n]}{E[T_n]}$

Question Number : 125 Question Id : 27028216306 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

Let X_1, X_2, \dots, X_n be a random sample from Uniform $(\theta - \frac{1}{2}, \theta + \frac{1}{2})$. Consider the problem

of testing $H_0: \theta = -\frac{1}{2}$ against $H_1: \theta = \frac{1}{2}$. Let $X_{(1)}$ is minimum order statistic. Reject H_0 if $X_{(1)}$

> 0 , accept otherwise. which of the following is true

Options :

1. ✘ Power of test is 0, size of the test is 0

2. ✘ Power of test is 0, size of the test is 1

3. ✘ Power of test is 1, size of the test is 0

4. ✓ Power of the test is 1, size of the test is 1

Question Number : 126 Question Id : 27028216307 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

Let $t = \frac{\bar{x} - \mu}{S / \sqrt{n}}$ be a statistic and λ be the likelihood ratio criteria. Then $\lambda =$

Options :

1. ✘ $\left[1 + \frac{t^2}{n-1}\right]^{-n}$

2. ✘ $\left[1 + \frac{t^2}{n}\right]^{-n}$

3. ✘ $\left[1 + \frac{t^2}{n}\right]^{-n/2}$

4. ✓ $\left[1 + \frac{t^2}{n-1}\right]^{-n/2}$

Question Number : 127 Question Id : 27028216308 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A

Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

Let the random variables X and Y follows a Bi-variate normal distribution with parameters

$(\mu_1, \mu_2, \sigma_1^2, \sigma_2^2, \rho)$. The variance of conditional distribution of X/Y is

Options :

1. ✓ $\sigma_1^2(1-\rho^2)$

2. ✗ $\sigma_2^2(1-\rho^2)$

3. ✗ $\sigma_1^2 / (1-\rho^2)$

4. ✗ $(1-\rho^2) / \sigma_1^2$

Question Number : 128 Question Id : 27028216309 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A

Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On

Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

Let x_1, x_2, x_3, x_4, x_5 be a random sample of size 5 drawn from a distribution with density

function $f(x) = \frac{1}{2\sigma} e^{-\frac{|x-\theta|}{\sigma}}$ where $x, \theta \in \mathbb{R}$, then the maximum likelihood estimate of θ is

Options :

1. ✗ \bar{x}

2. ✘ $X(1)$

3. ✔ $X(3)$

4. ✘ $X(5)$

Question Number : 129 Question Id : 27028216310 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

Given the probability density function $f(x, \theta) = \frac{1}{\pi [1 + (x - \theta)^2]}$; $-\infty < x, \theta < \infty$, the

Cramer-Rao lower bound of variance of an unbiased estimator of θ is

Options :

1. ✘ $\frac{1}{n}$

2. ✔ $\frac{2}{n}$

3. ✘ $\frac{1}{n^2}$

4. ✘ $\frac{2}{n^2}$

Question Number : 130 Question Id : 27028216311 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

Let x_1, x_2, \dots, x_n be an independent random sample of size 'n' drawn from one parameter exponential family of distribution with density function $f(x, \theta)$ where $x, \theta \in \mathbb{R}$, can be expressed in the form $f(x, \theta) = \exp\{ a(x) + b(\theta) + c(x) \cdot d(\theta) \}$ then the variance of the distribution is

Options :

1. ✘ $\frac{b'(\theta)}{d'(\theta)}$

2. ✘ $-\frac{b'(\theta)}{d'(\theta)}$

3. ✘ $\frac{b'(\theta)d''(\theta) - b''(\theta)d'(\theta)}{[d'(\theta)]^2}$

4. ✔ $\frac{b'(\theta)d''(\theta) - b''(\theta)d'(\theta)}{[d'(\theta)]^3}$

Question Number : 131 Question Id : 27028216312 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

Let $y_{ij} = \mu + \alpha_i + \gamma_j + \beta(x_{ij} - \bar{x}_{..}) + \varepsilon_{ij}$ be the model used for analysis of covariance two way classification, where y_{ij} indicates response, x_{ij} indicates observed covariate, μ is population mean, α_i indicating i^{th} treatment effect, γ_j indicating j^{th} block effect and β indicating linear regression coefficient. ε is error term, then conditional regression sum of squares $R(\mu, \alpha_i, \beta / \gamma_j = 0)$ in the usual notation is

Options :

1. ✓ $\frac{y_{..}^2}{nv} + T_{yy} + \beta [S_{xy} - T_{xy}]$

2. ✗ $\frac{y_{..}^2}{nv} + B_{yy} + \beta [S_{xy} - B_{xy}]$

3. ✗ $\frac{y_{..}^2}{nv} + B_{yy} - \beta [S_{yy} - B_{yy}]$

4. ✗ $\frac{y_{..}^2}{nv} + T_{yy} - \beta [S_{xy} - T_{yy}]$

Question Number : 132 Question Id : 27028216313 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

In intra block analysis of Balanced Incomplete Block Design, the variance of adjusted treatment effect estimator is

Options :

1. ✘ $\frac{rk}{\lambda v} \sigma^2$

2. ✘ $\frac{\lambda v}{rk} \sigma^2$

3. ✘ $\frac{rk}{\lambda^2 v^2} \sigma^2$

4. ✔ $\frac{rk}{\lambda^2 v^2} (k - 1) \sigma^2$

Question Number : 133 Question Id : 27028216314 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

A 2^3 factorial experiment is conducted in three replicates. Treatment totals on three replicates are: (1) = 28, (a) = 27, (b) = 25, (ab) = 26, (c) = 22, (ac) = 32, (bc) = 28, (abc) =

32. The sum of squares due to the main effect A is

Options :

1. ✘ 14.00

2. ✘ 19.65

3. ✔ 8.17

4. ✘ 12.61

**Question Number : 134 Question Id : 27028216315 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No**

Correct Marks : 2 Wrong Marks : 0

The confounded term in a 3^2 factorial design with three blocks in a replicate is, if the Blocks

are: Block-I: 00 11 22; Block-II: 02 10 21; Block-III: 01 12 20

Options :

1. ✔ I(AB)

2. ✘ J(AB)

3. ✘ A

4. ✘ B

**Question Number : 135 Question Id : 27028216316 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No**

Correct Marks : 2 Wrong Marks : 0

Consider a statistical model $Y_{ij} = \mu + \alpha_i + \beta_j + \varepsilon_{ij}$ with α_i and β_j are random. Then the variance component, $V(\sigma_{\beta^2}) =$ are

Options :

1. ✘
$$\frac{2}{v} \left[\frac{E[MSB]}{b-1} + \frac{\sigma_e^2}{(v-1)(b-1)} \right]$$

2. ✔
$$\frac{2}{v^2} \left[\frac{E^2[MSB]}{b-1} + \frac{[\sigma_e^2]^2}{(v-1)(b-1)} \right]$$

3. ✘
$$\frac{2\sigma_e^4}{(v-1)(b-1)}$$

4. ✘
$$\frac{2}{b^2} \left[\frac{E^2[MSB]}{v-1} + \frac{[\sigma_e^2]^2}{(v-1)(b-1)} \right]$$

Question Number : 136 Question Id : 27028216317 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

In probability proportional to size sampling, the variance of unbiased estimator, $V[\hat{Y}_{pps}]$ is

Options :

1. ✘
$$\frac{1}{n(n+1)} \sum_{i=1}^n \left\{ \frac{y_i}{p_i} - \hat{Y} \right\}^2$$

2. ✓
$$\frac{1}{n(n-1)} \sum_{i=1}^n \left\{ \frac{y_i}{p_i} - \hat{Y} \right\}^2$$

3. ✗
$$\frac{1}{n^2} \sum_{i=1}^n \left\{ \frac{y_i}{p_i} - \hat{Y} \right\}^2$$

4. ✗
$$\frac{1}{(n-1)} \sum_{i=1}^n \left\{ \frac{y_i}{p_i} - \hat{Y} \right\}^2$$

Question Number : 137 Question Id : 27028216318 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

Let V_{ran} , V_{prop} and V_{opt} be the variances of the usual estimators under Sample random sampling, proportional allocation and optimum allocation for a given sample size . If N_h is large then

Options :

1. ✗ $V_{\text{ran}} \leq V_{\text{prop}} \leq V_{\text{opt}}$

2. ✓ $V_{\text{ran}} \geq V_{\text{prop}} \geq V_{\text{opt}}$

3. ✗ $V_{\text{ran}} \leq V_{\text{prop}} \geq V_{\text{opt}}$

4. ✗ $V_{\text{ran}} \geq V_{\text{prop}} \leq V_{\text{opt}}$

Question Number : 138 Question Id : 27028216319 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

Let x_1, x_2, \dots, x_n be a random sample from $N(\mu, \sigma^2)$ where σ^2 is known. The 95% confidence
interval for μ is given by =

Options :

1. ✓ $(\bar{x} - 1.96 \frac{\sigma}{\sqrt{n}}, \bar{x} + 1.96 \frac{\sigma}{\sqrt{n}})$

2. ✗ $(\bar{x} - 1.645 \frac{\sigma}{\sqrt{n}}, \bar{x} + 1.645 \frac{\sigma}{\sqrt{n}})$

3. ✗ $(\bar{x} - 2.33 \frac{\sigma}{\sqrt{n}}, \bar{x} + 2.33 \frac{\sigma}{\sqrt{n}})$

4. ✗ $(\bar{x} - 2.58 \frac{\sigma}{\sqrt{n}}, \bar{x} + 2.58 \frac{\sigma}{\sqrt{n}})$

Question Number : 139 Question Id : 27028216320 Question Type : MCQ Option Shuffling : No
Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A
Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On
Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :
No

Correct Marks : 2 Wrong Marks : 0

Identify the closed class in the following, based on the on the transition probability matrix

$$P, \text{ with the state space } S, \text{ where } S = \{1, 2, 3, 4\} \text{ and } P = \begin{bmatrix} 1/3 & 2/3 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 1/2 & 0 & 1/2 & 0 \\ 0 & 0 & 1/2 & 1/2 \end{bmatrix}$$

Options :

1. ✘ $\{1, 4\}$

2. ✘ $\{2, 3\}$

3. ✘ $\{3, 4\}$

4. ✔ $\{1, 2\}$

Question Number : 140 Question Id : 27028216321 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A

Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On

Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :

No

Correct Marks : 2 Wrong Marks : 0

On any given day Mr. X is either Happy (H) , Sad (S), or Pressure (P). If he is Happy today, then he will be H, S, or P tomorrow with respective probabilities 0.5, 0.4, 0.1. If he is feeling Sad today, then he will be H, S, or P tomorrow with probabilities 0.3, 0.4, 0.3. If he is Pressure today, then he will be H, S, or P tomorrow with probabilities 0.2, 0.3, 0.5. When the mood of an individual is considered as three-state Markov chain, in the long run , what proportion of time is the process in each of the three states?

Options :

1. ✘ $\left(\frac{15}{62}, \frac{20}{62}, \frac{27}{62}\right)$

2. ✔ $\left(\frac{21}{62}, \frac{23}{62}, \frac{18}{62}\right)$

3. ✘ $\left(\frac{21}{62}, \frac{25}{62}, \frac{16}{62}\right)$

4. ✘ $\left(\frac{32}{62}, \frac{15}{62}, \frac{15}{62}\right)$

Question Number : 141 Question Id : 27028216322 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

The stationary distribution π of three state Markov chain whose transition probability matrix

$$\text{is } P = \begin{bmatrix} 0 & 2/3 & 1/3 \\ 3/8 & 1/8 & 1/2 \\ 1/2 & 1/2 & 0 \end{bmatrix}$$

Options :

1. ✔ $(0.3 \ 0.4 \ 0.3)$

2. ✘ $(0.0 \ 0.8 \ 0.2)$

3. ✘ $(0.1 \ 0.5 \ 0.4)$

4. ✘ $(0.4 \ 0.4 \ 0.2)$

Question Number : 142 Question Id : 27028216323 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A

Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On

Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control :

No

Correct Marks : 2 Wrong Marks : 0

The variance of Mann-Whitney U-statistic is

Options :

1. ✘ $\frac{n_1 n_2}{2}$

2. ✘ $\frac{(n_1 + n_2 + 1)}{12}$

3. ✔ $\frac{n_1 n_2 (n_1 + n_2 + 1)}{12}$

4. ✘ $\frac{n_1 n_2 (n_1 + n_2 + 1)}{12n}$

Question Number : 143 Question Id : 27028216324 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A

Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On

Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

When the total number of runs of $n = n_1 + n_2$ objects, n_1 of type 1 and n_2 of type 2 in a random sample, the probability distribution of R , $f(r)$ when 'r' is even, is

Options :

1. ✘
$$\frac{\binom{n_1 - 1}{\frac{r}{2} - 1} \binom{n_2 - 1}{\frac{r}{2} - 1}}{\binom{n_1 + n_2}{n_1}}$$

2. ✔
$$2 \frac{\binom{n_1 - 1}{\frac{r}{2} - 1} \binom{n_2 - 1}{\frac{r}{2} - 1}}{\binom{n_1 + n_2}{n_1}}$$

3. ✘
$$\frac{\binom{n_1 - 1}{\frac{r}{2} - 1} \binom{n_2 - 1}{\frac{r}{2} - 1}}{2 \binom{n_1 + n_2}{n_1}}$$

4. ✘
$$4 \frac{\binom{n_1 - 1}{\frac{r}{2} - 1} \binom{n_2 - 1}{\frac{r}{2} - 1}}{\binom{n_1 + n_2}{n_1}}$$

Question Number : 144 Question Id : 27028216325 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

The optimal solution to the linear programming problem Maximize $Z = 3X_1 + 2X_2$ subject to the constraints: $2X_1 + X_2 \leq 2$; $3X_1 + 4X_2 \geq 12$ and $X_1, X_2 \geq 0$ is

Options :

1. ✘ no solution
2. ✘ unbounded solution
3. ✘ optimal solution with $Z = 4$
4. ✔ psedo-optimal solution with $Z = 4$

Question Number : 145 Question Id : 27028216326 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

A company desires to transport cement from its three plants P_1, P_2, P_3 to three depots D_1, D_2, D_3 . The quantities produced at plants and demand at depots and respective transportation costs in Rs. Per ton are as follows.

	D_1	D_2	D_3	Availability
P_1	7	3	4	2
P_2	2	1	3	3
P_3	3	4	6	5
Demand	4	1	5	

Optimum basic feasible solution to the transportation problem is

Options :

1. ✘ 28
2. ✔ 33

3. ✘ 37

4. ✘ 49

Question Number : 146 Question Id : 27028216327 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

The probability that sequential probability ratio test does not terminate at all is

Options :

1. ✘ 1

2. ✘ 0.5

3. ✘ 0.85

4. ✔ 0

Question Number : 147 Question Id : 27028216328 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

If σ_{ii} $i=1, 2, \dots, p$ are the elements and $\lambda_1, \lambda_2 \dots \lambda_p$ are the eigen values of the variance-covariance matrix Σ , then the proportion of variance explained by the i^{th} principal component is

Options :

1. ✘
$$\frac{\sigma_{ii}}{\sum_{i=1}^p \sigma_{ii}}$$

2. ✘
$$\frac{1}{\sum_{i=1}^p \sigma_{ii}}$$

3. ✔
$$\frac{\lambda_i}{\sum_{i=1}^p \lambda_i}$$

4. ✘
$$\frac{1}{\sum_{i=1}^p \lambda_i}$$

Question Number : 148 Question Id : 27028216329 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No Correct Marks : 2 Wrong Marks : 0

A stereo hi-fi system will function if the three components (i) Speaker C_1 (ii) Record changer C_2 (iii) Amplifier C_3 are functioning. But, the system was built with multiple copies of components, two speakers and two record changers. The probability for functioning, speaker, record changer and amplifier are 0.4, 0.6 and 0.8 respectively. The Reliability for the system functioning is

Options :

1. ✓ 0.430

2. ✗ 0.192

3. ✗ 0.768

4. ✗ 0.046

Question Number : 149 Question Id : 27028216330 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

Let T have exponential distribution $F(t) = 1 - e^{-\lambda t}$ for $t \geq 0$. The conditional survival probability $P[T > t+x / T > t] =$

Options :

1. ✗ $1 - e^{-\lambda x}$

2. ✗ e^{-x}

3. ✓ $e^{-\lambda x}$

4. ✗ e^{-t}

Question Number : 150 Question Id : 27028216331 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes Time interval to replay(In Seconds) : 0 Allow Volume Control : No

Correct Marks : 2 Wrong Marks : 0

Let $\underline{X}^{(1)}$ and $\underline{X}^{(2)}$ be two multivariate random samples drawn respectively from $N_p(\mu^{(1)}, \Sigma)$ and $N_p(\mu^{(2)}, \Sigma)$. Then Mahalanobis squared distance between two multivariate normal populations is

Options :

1. ✗ $(\bar{X} - \mu)' \Sigma^{-1} (\bar{X} - \mu)$ where $\mu = \frac{1}{2} [\mu^{(1)} + \mu^{(2)}]$ and $\bar{X} = \frac{1}{2} [\bar{X}^{(1)} + \bar{X}^{(2)}]$

2. ✓ $(\bar{X}^{(1)} - \bar{X}^{(2)})' \Sigma^{-1} (\bar{X}^{(1)} - \bar{X}^{(2)})$

3. ✗ $(\bar{X}^{(1)} - \mu^{(1)})' \Sigma^{-1} (\bar{X}^{(2)} - \mu^{(2)})$

4. ✗ $(\mu^{(1)} - \mu^{(2)})' \Sigma (\mu^{(1)} - \mu^{(2)})$