

PGT MATHS MALE

Section : Mental Ability

Q.1 आपको एक वाक्य और दो निष्कर्ष दिए गए हैं। उन्हें ध्यानपूर्वक पढ़ें और निर्णय लें कि कौन सा/से निष्कर्ष वाक्य का तर्कसंगत रूप से अनुसरण करता है/करते हैं।

Question ID : 723053635

वाक्य:

'हमारे 'X' ब्रांड के मोबाइल फोन, तस्वीर की स्पष्टता और कर्कों की बहुतायत में सबसे उत्तम हैं' - टी.वी. पर एक विज्ञापन।

निष्कर्ष:

- I. टी.वी. देखनेवाले दर्शकों की विस्तृत शृंखला है।
- II. लोग मोबाइल फोन में तस्वीर की स्पष्टता और कर्कों की बहुतायत को खोजते हैं।

- Ans
- ☒ 1. केवल निष्कर्ष II तर्कसंगत है
 - ☒ 2. या तो I या फिर II तर्कसंगत है
 - ☒ 3. दोनों निष्कर्ष I और II तर्कसंगत हैं
 - ☒ 4. केवल निष्कर्ष I तर्कसंगत है

Q.2 निम्नलिखित वेन आरेख पर विचार करें।

Question ID : 723053618



वेन आरेख में दिए गए अंक लोगों की संख्या को दर्शाते हैं जो अलग-अलग समाचार पत्र पढ़ते हैं। वे आरेख 100 लोगों पर सर्वेक्षण करने के बाद बनाया गया है। 5,000 की जनसंख्या में कितने लोगों से अपेक्षा की जा सकती है कि वे कम से कम दो समाचार पत्र पढ़ते होंगे?

- Ans
- ☒ 1. 2,850
 - ☒ 2. 2,750
 - ☒ 3. 2,875
 - ☒ 4. 2,900

Q.3 In the following figure, if the centres of all the circles are joined by horizontal and vertical lines, then find the number of squares that can be formed is:

Question ID : 723053624



- Ans
- ☒ 1. 5
 - ☒ 2. 8
 - ☒ 3. 4
 - ☒ 4. 3

Q.4

Question ID : 723053619

You are given two statements and two conclusions. Read them carefully and decide which of the conclusions logically follow(s) from the statements.

Statements:

All bulbs are flowers.
Some flowers are leaves.

Conclusions:

- I. All bulbs are leaves.
- II. All leaves are flowers.

- Ans ☒ 1. Neither conclusion I nor II follows
- ☒ 2. Only conclusion I follows
- ☒ 3. Either conclusion I or II follows
- ☒ 4. Only conclusion II follows

Q.5 Choose the missing character from the given alternatives.

Question ID : 723053617

AD _{2,5}	BE _{3,5}	CF _{4,5}
DG _{5,5}	EH _{6,5}	FI _{7,5}
GJ _{8,5}	?	IL _{10,5}

- Ans ☒ 1. KL_{9,5}
- ☒ 2. HK_{9,5}
- ☒ 3. HI_{9,5}
- ☒ 4. KH_{9,5}

Q.6 Find the missing term in the below number series.

Question ID : 723053625

22, 23, 27, 36, 52, 77, 113, _____, 226

- Ans ☒ 1. 161
- ☒ 2. 176
- ☒ 3. 162
- ☒ 4. 167

Q.7 'C \$ D' means 'C is the mother of D';

'C # D' means 'C is the father of D';

'C @ D' means 'C is the daughter of D';

Now, if P \$ Q # R @ S, then which of the following is NOT true?

Question ID : 723053623

- Ans ☒ 1. P is mother-in-law of S
- ☒ 2. S is the wife of Q
- ☒ 3. R is Q's daughter
- ☒ 4. Q is the wife of S

Q.8 राजा और संजय ने किसी स्थानों से एक दूसरे की तरफ चलना शुरू किया। राजा 20 km घसा और संजय 30 km घसा। फिर राजा अपनी बाईं ओर मुड़ा और संजय अपनी दाईं ओर मुड़ा, और फिर वे दोनों 25 km घसे। अगर राजा अभी उत्तर दिशा की ओर देख रहा है, तो संजय अभी किस दिशा में देख रहा है?

Question ID : 723053636

- Ans ☒ 1. उत्तर
- ☒ 2. पश्चिम
- ☒ 3. पूर्व
- ☒ 4. दक्षिण

Q.9 Choose the missing character from the given alternatives.

Question ID : 723053629

3	3	216
4	3	?
5	3	512

- Ans ☒ 1. 343
☒ 2. 256
☒ 3. 396
☒ 4. 356

Q.10 Out of the four given alternatives, choose the most appropriate description about the three words given below.

Question ID : 723053634

BIBLE : GITA : QURAN

- Ans ☒ 1. They teach that Hindu, Muslims and Christians are different.
☒ 2. They are sacred books of a few Indians.
☒ 3. They are the holy books.
☒ 4. All of them are written in Urdu language.

Q.11 Five friends — Geetha, Seetha, Preetha, Vanitha and Rani — are sitting in a circle. Seetha is sitting between Geetha and Vanitha, whereas Vanitha is sitting to Rani's right. Then, who is seated to Preetha's left?

Question ID : 723053626

- Ans ☒ 1. Rani
☒ 2. Vanitha
☒ 3. Seetha
☒ 4. Geetha

Q.12 Which letter will be 10th to the right of the 18th letter from the right end of the English alphabet series?

Question ID : 723053621

- Ans ☒ 1. P
☒ 2. T
☒ 3. R
☒ 4. S

Q.13 नीचे दी गई परिस्थिती को पढ़ें और आपके द्वारा लिए जानेवाले सबसे तार्किक कदम का चयन करें।

Question ID : 723053632

आपके पड़ोसी का हाथ भोजन बनाते समय जल गया है। आपको:

- Ans ☒ 1. उसके हाथों को पानी में डुबाए रखना चाहिए जब तक जलन का एहसास कम ना हो जाए।
☒ 2. जले हुए हिस्से पर मरहम लगाना चाहिए।
☒ 3. अपने पड़ोसी से कहना चाहिए कि उसे ज्यादा सावधान रहना चाहिए था।
☒ 4. परिस्थिती को नज़रंदाज़ करना चाहिए।

Q.14

Question ID : 723053633

Find the missing term in the below series.

ZabY, XcdW, VefU, _____, RjiQ

- Ans
- ✓ 1. TghS
 - ✗ 2. ThgS
 - ✗ 3. SghT
 - ✗ 4. ShgT

Q.15 If BIRLA is coded as 92513 and UMPIRE is coded as 487256, then what is the code for UMBRELLA?

Question ID : 723053628

- Ans
- ✗ 1. 48659113
 - ✗ 2. 48959113
 - ✗ 3. 48695113
 - ✓ 4. 48956113

Q.16 Read the following information carefully and answer the question given below.

Question ID : 723053631

α denotes 'greater than';
 β denotes 'less than';
 γ denotes 'not greater than';
 δ denotes 'equal to';
 μ denotes 'not less than';

If $Y \delta 2Z$ and $3Z \gamma X$, then which of the following is true?

- Ans
- ✓ 1. $Y \beta X$
 - ✗ 2. $3Y \alpha 2X$
 - ✗ 3. $Y \delta X$
 - ✗ 4. $Y \mu 2X$

Q.17 Select the pair from the options that has the same relationship between the numbers as there exists between the numbers of the pair given below:

Question ID : 723053630

4 : 36 :: _____

- Ans
- ✗ 1. 6 : 50
 - ✗ 2. 2 : 8
 - ✓ 3. 5 : 49
 - ✗ 4. 3 : 81

Q.18 In a certain code, PAPER is written as QCSIW. How is HOSTEL written in the same code?

Question ID : 723053620

- Ans
- ✓ 1. IQVXJR
 - ✗ 2. IQUXIR
 - ✗ 3. IQVXIR
 - ✗ 4. IQUXJQ

Q.19 उस विकल्प का चयन करें जो तीसरे पद से ठीक उसी तरह संबंधित है जिस तरह दूसरा पद पहले पद से सम्बंधित है।

Question ID : 723053627

सौंपना : बाँटना :: मिश्रण : _____

- Ans
- ✓ 1. मिलाना
 - ✗ 2. रस

✗ 3. झुकना

✗ 4. अलग करना

Q.20 Kumar walks 6 km to the east and then turns to the south to walk 2 km. He again turns to the east and walks 2 km. Next, he turns northwards and walks 8 km. How far is he now from his starting point?

Question ID : 723053622

Ans ✗ 1. 10.5 km

✓ 2. 10 km

✗ 3. 12 km

✗ 4. 8 km

Section : General Awareness

Q.1 अहमदाबाद में दर्पण अकादमी ऑफ परफॉर्मिंग आर्ट्स की स्थापना किसने की?

Question ID : 723053649

Ans ✗ 1. सोनल मानसिंह

✗ 2. रुक्मिणी देवी अरुंडले

✓ 3. मृणालिनी साराभाई

✗ 4. यामिनी कृष्णमूर्ति

Q.2 भारत के नियंत्रक और महालेखा परीक्षक की नियुक्ति कौन करता है?

Question ID : 723053642

Ans ✗ 1. भारत के मुख्य न्यायाधीश

✗ 2. भारत के प्रधानमंत्री

✓ 3. भारत के राष्ट्रपति

✗ 4. भारत के उप राष्ट्रपति

Q.3 अनंतगिरि पहाड़ियां किस राज्य में स्थित है?

Question ID : 723053641

Ans ✗ 1. आन्ध्र प्रदेश

✗ 2. केरल

✓ 3. तेलंगाना

✗ 4. कर्णाटक

Q.4 मशहूर किताब "पावर्टी एंड अन-ब्रिटिश रूल इन इंडिया" के लेखक कौन थे?

Question ID : 723053637

Ans ✗ 1. सुभाष चन्द्र बोस

✓ 2. दादाभाई नौरोजी

✗ 3. मोहम्मद अली जिन्ना

✗ 4. मदन मोहन मालवीय

Q.5 ग्लोबल बायोफार्मा मिशन के तहत शुद्धता और औषधीय विकास की दिशा में अनुसंधान को तेज करने के लिए भारत सरकार ने लघुसे वित्तियन व्यवस्था के लिए किसके साथ समझौता किया है?

Question ID : 723053655

- Ans
- ✓ 1. विश्व बैंक (World Bank)
 - ✗ 2. यूनिसेफ (UNICEF)
 - ✗ 3. अंतर्राष्ट्रीय मुद्रा कोष (IMF)
 - ✗ 4. विश्व स्वास्थ्य संघटन (WHO)

Q.6 प्रसिद्ध संगीतकार अरविंद परीख निम्नलिखित संगीत वाद्ययंत्रों में से किससे जुड़े हैं?

Question ID : 723053648

- Ans
- ✓ 1. सितार
 - ✗ 2. शहनाई
 - ✗ 3. मृदंगम
 - ✗ 4. सरोद

Q.7 चपचर कुट उत्सव किस राज्य में मनाया जाता है?

Question ID : 723053647

- Ans
- ✗ 1. मणिपुर
 - ✓ 2. मिजोरम
 - ✗ 3. असम
 - ✗ 4. नागालैंड

Q.8 अप्रैल 2018 तक आईपीएल के सभी सर्जों में "सबसे ज्यादा विकेट" का रिकॉर्ड किसके पास है?

Question ID : 723053651

- Ans
- ✗ 1. रविचंद्रन अश्विन
 - ✗ 2. हरभजन सिंह
 - ✗ 3. उमेश यादव
 - ✓ 4. लसिथ मलिंगा

Q.9 कान्हा राष्ट्रीय उद्यान किस राज्य में स्थित है?

Question ID : 723053640

- Ans
- ✗ 1. पश्चिम बंगाल
 - ✗ 2. उत्तर प्रदेश
 - ✓ 3. मध्य प्रदेश
 - ✗ 4. छत्तीसगढ़

Q.10 Which mirror is used in the headlight of cars?

Question ID : 723053652

- Ans
- ✗ 1. Rectangle mirror
 - ✓ 2. Concave mirror
 - ✗ 3. Convex mirror
 - ✗ 4. Plane mirror

Q.11

- Ans
- ✓ 1. 6
 - ✗ 2. 3
 - ✗ 3. 2
 - ✗ 4. 9

Q.12 निम्न में से कौन सा सही है?

Question ID : 723053643

- Ans
- ✓ 1. एक राज्य की विधान परिषद का विघटन नहीं किया जा सकता है।
 - ✗ 2. एक राज्य की विधान परिषद पांच साल बाद भंग हो जाती है।
 - ✗ 3. एक राज्य की विधान परिषद छः साल बाद भंग हो जाती है।
 - ✗ 4. राज्यपाल एक राज्य की विधान परिषद को भंग करता है।

Q.13 किस पुलिस स्टेशन में प्रदर्शनकारी की एक भीड़ द्वारा आग लगाये जाने के उपरान्त 1922 में महात्मा गांधी द्वारा असहयोग आंदोलन बंद कर दिया गया था?

Question ID : 723053638

- Ans
- ✗ 1. वर्धा
 - ✗ 2. वैशाली
 - ✗ 3. साबरमती
 - ✓ 4. चौरी चौरा

Q.14 वर्ष 2018-19 के लिए जूट के लिए प्रति बिंदल का अधिकतम बिक्री मूल्य क्या तय किया गया है?

Question ID : 723053656

- Ans
- ✗ 1. ₹ 3,500
 - ✗ 2. ₹ 4,200
 - ✓ 3. ₹ 3,700
 - ✗ 4. ₹ 3,100

Q.15 आरबीआई को विनियम नियंत्रण के लिए वैधानिक शक्ति कौन से विदेशी मुद्रा विनियमन अधिनियम (एफईआर) द्वारा प्रदान की गई थी?

Question ID : 723053645

- Ans
- ✗ 1. 1923
 - ✗ 2. 1981
 - ✗ 3. 1963
 - ✓ 4. 1947

Q.16 Where is the headquarters of UNICEF located?

Question ID : 723053653

- Ans
- ✗ 1. Shanghai
 - ✗ 2. London
 - ✓ 3. New York
 - ✗ 4. Paris

Q.17 निम्नलिखित में से कौन सी विशेषता बौद्ध धर्म को जैन धर्म से अलग करती हैं?

Question ID : 723053639

Ans

- ☒ 1. सजीव प्राणियों को नुकसान नहीं पहुंचाना
- ☒ 2. अच्छे कर्मों में विश्वास
- ☒ 3. वेदों के प्रभुत्व की अस्वीकृति
- ☒ 4. आचरण और आत्मनिग्रह का चरम रूप

Q.18 किसी राज्य के राज्यपाल किसके प्रसाद पर्यन्त अधिकार में रह सकते हैं?

Question ID : 723053644

Ans

- ☒ 1. भारत के अटॉर्नी जनरल
- ☒ 2. भारत के गृह मंत्री
- ☒ 3. भारत के राष्ट्रपति
- ☒ 4. संबंधित राज्य के मुख्यमंत्री

Q.19 गोबर-धन योजना कि शुरुआत _____ राष्ट्रीय डेयरी रिसर्च इंस्टीट्यूट में की गई थी।

Question ID : 723053654

Ans

- ☒ 1. अम्बाला
- ☒ 2. करनाल
- ☒ 3. हिसार
- ☒ 4. रोहतक

Q.20 भारत ने कुश्ती में अब तक कितने ओलिंपिक पदक जीते हैं?

Question ID : 723053650

Ans

- ☒ 1. 7
- ☒ 2. 2
- ☒ 3. 3
- ☒ 4. 5

Section : Arithmetic Ability

Q.1 $\frac{1}{2} + \frac{1}{5} + \frac{1}{8} + \frac{1}{11} + \frac{1}{20} + \frac{1}{41} + \frac{1}{110} + \frac{1}{1640}$ is equal to:

Question ID : 723053660

Ans

- ☒ 1. 1.6
- ☒ 2. 1.8
- ☒ 3. 1
- ☒ 4. 2

Q.2 यदि अठारह लगातार धनात्मक पूर्णाकों का योग एक पूर्ण वर्ग है, तो योग का सबसे छोटा संभव मूल्य है:

Question ID : 723053657

Ans

- ☒ 1. 225
- ☒ 2. 169
- ☒ 3. 289

✗ 4. 324

Q.3 Three concentric circles have radii (in cm) a , b and c where $a < b < c$, if $a = 8$, $b = 9$ and the middle circle bisects the area between the other two circles, then the value of c is:

Question ID : 723053668

Ans ✗ 1. 8

✗ 2. $8\sqrt{2}$

✓ 3. $7\sqrt{2}$

✗ 4. 7

Q.4 अनिल अपने वेतन का 90% खर्च करता है। यदि उसका वेतन 32% बढ़ जाता है और उसके खर्च में 50% की बढ़त होती है तो उसके खर्च में वितरण प्रतिशत की बढ़ोतरी होती है?

Question ID : 723053665

Ans ✗ 1. 25

✗ 2. 36

✗ 3. 32

✓ 4. 30

Q.5 A person has 1323 mangoes, 2457 apples and 2835 oranges. He wants to pack them in boxes so that each box has equal number of fruits of the same kind. The least number of boxes will be:

Question ID : 723053663

Ans ✓ 1. 35

✗ 2. 28

✗ 3. 54

✗ 4. 20

Q.6 एक व्यक्ति 21 km की दूरी के लिए धारा के विपरीत लौका घाता है और फिर बुधभाती बिंदु पर लौटता है। वह इस यात्रा को 10 घंटे में पूरा करता है। यदि 7 km धारा के अनुकूल जाने में उसके द्वारा लिया गया समय 3 km धारा के विपरीत जाने में लिए गए समय के बराबर है, तो धारा की गति क्या है?

Question ID : 723053669

Ans ✗ 1. 3 km/h

✗ 2. $1\frac{1}{2}$ km/h

✓ 3. 2 km/h

✗ 4. $3\frac{1}{2}$ km/h

Q.7 अंकित मूल्य में 20% छूट के साथ एक वस्तु को बेचने पर $x\%$ की हानि होती है। अगर यह अंकित मूल्य पर बेचा जाता है तो 15% का लाभ होता है। x का मान क्या है?

Question ID : 723053666

Ans ✓ 1. 8%

✗ 2. 12%

✗ 3. 9%

✗ 4. 10%

Q.8 A, B और C एक साथ काम कर एक कार्य 18 दिनों में पूरा कर सकते हैं। B उसी काम के लिए A से दोगुना समय लेता है और C उसी काम के लिये B से दोगुना समय लेता है। वे 4 दिनों के लिए मिलकर काम करते हैं। A अकेला शेष कार्य कितने दिनों में पूरा करेगा?

Question ID : 723053670

Ans ✗ 1. 24 दिन

✓ 2. $24\frac{1}{2}$ दिन

✗ 3. $20\frac{1}{2}$ दिन

✗ 4. 20 दिन

Q.9

The value of $\frac{(12.12)^2 - (8.12)^2}{(0.25)^2 + (0.25)(19.99)} \div \left(\frac{17.28 + 12}{3.6 \times 0.02}\right)$ is:

Question ID : 723053658

Ans

- ✓ 1. 0.8
✗ 2. 1.2
✗ 3. 0.4
✗ 4. 0.6

Q.10

Two alloys A and B contain copper and zinc in the ratio 4 : 1 and 3 : 5, respectively. They are mixed in the ratio 9 : 4 to get a new alloy C. What is the ratio of copper and zinc in alloy C?

Question ID : 723053664

Ans

- ✓ 1. 87 : 43
✗ 2. 13 : 12
✗ 3. 17 : 18
✗ 4. 16 : 17

Q.11

The sum and difference of LCM and HCF of two numbers are 592 and 518, respectively. If the difference of the numbers is x and their sum is 296 then the value of x is:

Question ID : 723053662

Ans

- ✗ 1. 148
✗ 2. 37
✗ 3. 111
✓ 4. 74

Q.12

On simplification, $\frac{\frac{1}{5}}{\frac{1}{5} + \frac{\frac{7}{3}}{\frac{5}{9} - \frac{2}{1 + \frac{2}{3}}}}$ reduces to:

Question ID : 723053661

Ans

- ✓ 1. 9
✗ 2. 45
✗ 3. $\frac{1}{9}$
✗ 4. $\frac{1}{45}$

Q.13

The value of $\frac{5 + [2 + \{2 - 2(5 - 3) + 5\} - 10] + 5}{3 + \frac{1}{6}\{29 - (20 + 3) + \frac{1}{2} \text{ of } 48\} + 4}$ lies between:

Question ID : 723053659

Ans

- ✓ 1. 0.3 and 0.4
✗ 2. 0.1 and 0.2
✗ 3. 0.2 and 0.3
✗ 4. 0.4 and 0.5

Q.14

₹ 13,600 का मूलधन चक्रवृद्धि व्याज के किसी खास वार्षिक दर पर किसी खास समयावधि में बढ़ कर ₹ 16,456 हो जाता है। वह मूलधन उसी वार्षिक दर पर उससे आधे समय में कितना होगा?

Question ID : 723053667

Ans

- ✗ 1. ₹ 15,840
✗ 2. ₹ 14,840
✓ 3. ₹ 14,960

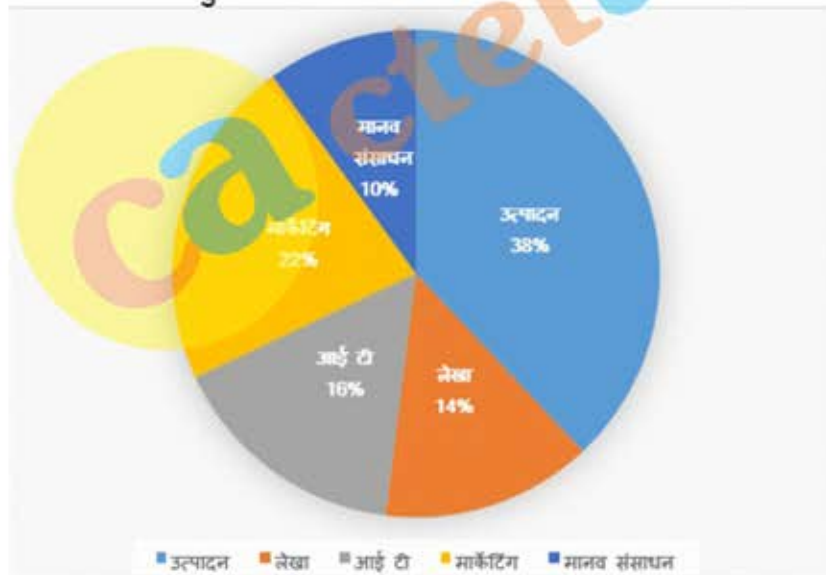
Comprehension:

निम्नलिखित पाई चार्ट और तालिका का अध्ययन करें और अनुसरण करने वाले प्रश्नों का उत्तर दें।

निम्नलिखित तालिका किसी कंपनी के प्रत्येक विभाग में पुरुषों के संबंधित अनुपात को महिलाओं के संबंधित अनुपात दिखाती है।

विभाग	पुरुष : महिला
उत्पादन	11 : 8
मानव संसाधन	8 : 7
आईटी	3 : 5
मार्केटिंग	7 : 4
लेखा	2 : 5

विभिन्न विभागों में कर्मचारियों के प्रतिशत के आधार पर विभाजन
कुल कर्मचारियों की संख्या = 2850



SubQuestion No : 15

Q.15 उत्पादन विभाग में काम कर रही महिलाओं की संख्या से आईटी और मार्केटिंग विभागों में काम कर रहे पुरुषों की कुल संख्या का अनुपात क्या है?

Question ID : 723053672

Ans 1. 2 : 1

✗ 2. 5 : 2

✗ 3. 10 : 9

✓ 4. 5 : 4

Comprehension:

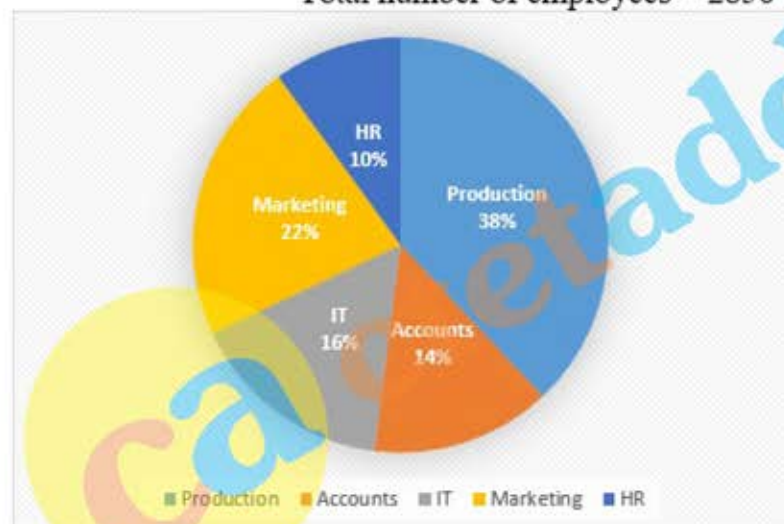
Study the following pie chart and table and answer the questions that follow.

The following table shows the respective ratio of males to females in each department of a company.

Department	Males : females
Production	11 : 8
HR	8 : 7
IT	3 : 5
Marketing	7 : 4
Accounts	2 : 5

Percentage wise breakup of employees in various departments

Total number of employees = 2850



SubQuestion No : 16

Q.1
6 The total number of females working in the HR department and the total number of males working in the Accounts department forms approximately how much percent of the total number of female employees in the company?

Question ID : 723053673

Ans ✗ 1. 16.4%

✗ 2. 15.8%

✗ 3. 16.2%

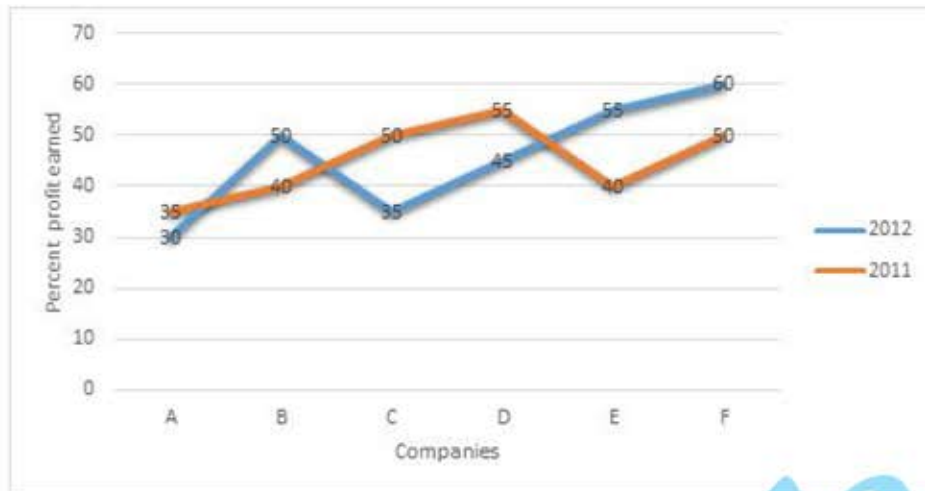
✓ 4. 17.8%

Comprehension:

Study the following graph which shows percent profit earned by six companies during 2011 and 2012. And answer the questions that follow.

Profit = Income – Expenditure

$$\% \text{ profit} = \frac{\text{Income} - \text{Expenditure}}{\text{Expenditure}} \times 100$$



SubQuestion No : 17

Q.1
7 The expenditures of company A in 2011 and 2012 were ₹ 21 crores and ₹ 25 crores, respectively. What was the total income of the company in these two years? (in crores of rupees)

Question ID : 723053676

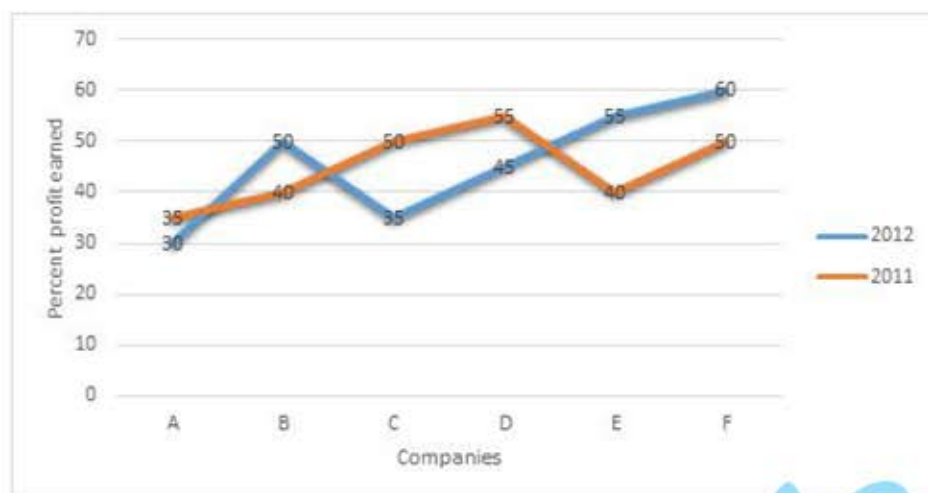
- Ans
- ☒ 1. 70.52
 - ☒ 2. 70.82
 - ☒ 3. 60.85
 - ☒ 4. 60.55

Comprehension:

Study the following graph which shows percent profit earned by six companies during 2011 and 2012. And answer the questions that follow.

Profit = Income – Expenditure

$$\% \text{ profit} = \frac{\text{Income} - \text{Expenditure}}{\text{Expenditure}} \times 100$$



SubQuestion No : 18

Q.18 If the expenditure of company E in 2011 and 2012 was the same, then what was the ratio of incomes of the company in the same years respectively?

Question ID : 723053675

- Ans
- ✗ 1. 29 : 31
 - ✗ 2. 9 : 10
 - ✓ 3. 28 : 31
 - ✗ 4. 8 : 11

Comprehension:

Study the following graph and answer the question that follows.

Target and Actual Production of Air Conditioners (in 1000) of a factory over the period of six months



SubQuestion No : 19

Q.1

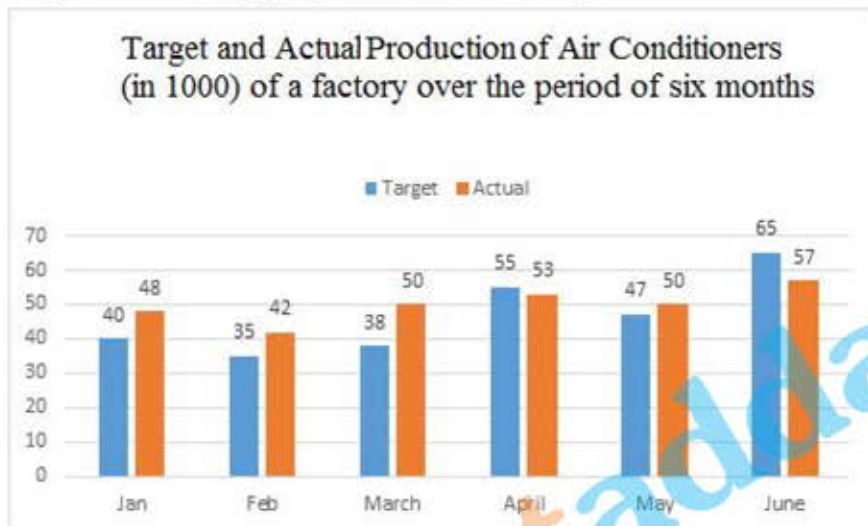
Question ID : 723053679

9 What is the difference between the total targeted production for February, April and May and the actual production in thousand for January, March and June?

- Ans
- ☒ 1. 22
 - ☒ 2. 18
 - ☒ 3. 29
 - ☒ 4. 24

Comprehension:

Study the following graph and answer the question that follows.



SubQuestion No : 20

Q.2 The combined actual production of air conditioners in February and June is what percent less than the combined targeted production in January, March and May?

Question ID : 723053678

- Ans
- ☒ 1. 19.8%
 - ☒ 2. 21.2%
 - ☒ 3. 20.8%
 - ☒ 4. 20.4%

Section : General English

Q.1 Choose the word that is correctly spelt.

Question ID : 723053692

- Ans
- ☒ 1. grammer
 - ☒ 2. irrelevant
 - ☒ 3. imediate
 - ☒ 4. recieve

Q.2

Question ID : 723053681

Choose the appropriate antonym of:

avoid

- Ans
- ☒ 1. discover
 - ☒ 2. kill
 - ☒ 3. dodge
 - ☒ 4. seek

Q.3 Fill in the blank with the appropriate word.

Question ID : 723053685

On Sundays I _____ have my breakfast in bed and spend the morning relaxing with a book.

- Ans
- ☒ 1. rapidly
 - ☒ 2. frequently
 - ☒ 3. gradually
 - ☒ 4. usually

Q.4 Choose the most appropriate indirect narration for the following sentence.

Question ID : 723053689

Ravi said, "Do you understand how difficult this job is? I need at least four team members to complete it within five days."

- Ans
- ☒ 1. Ravi says, "Do you understand how difficult this job is? I needed at least four team members to complete it within five days."
 - ☒ 2. Ravi asked if he understood how difficult that job was and further said he needed at least four team members to complete it within five days.
 - ☒ 3. Ravi said if he understands how difficult this job is? He said he needs at least four team members to complete it within five days.
 - ☒ 4. Ravi asked do you understand how difficult this job is? I need at least four team members to complete it within five days.

Q.5 In the following sentence four words or phrases have been underlined. One of them is incorrect. Choose the incorrect word or phrase from the given options.

Question ID : 723053686

One who desires wealth and property from God is not a devotee but a slavery of wealth and property because, to him, God is only a means to an end.

- Ans
- ☒ 1. not a devotee
 - ☒ 2. slavery of wealth
 - ☒ 3. means to an end
 - ☒ 4. One who desires

Q.6 Fill in the blank with the appropriate idiomatic expression.

Question ID : 723053693

Why are you _____? You paid no heed when you were warned so many times.

- Ans
- ☒ 1. crying over spilt milk
 - ☒ 2. giving yourself airs
 - ☒ 3. beating about the bush
 - ☒ 4. chicken- hearted

Q.7 Choose the correct synonym of:

Question ID : 723053680

oration

Ans

- ☒ 1. silence
- ☒ 2. attraction
- ☒ 3. speech
- ☒ 4. dialogue

Q.8 Fill in the blank with the appropriate word/s.

Question ID : 723053684

Did your college _____ in the university tournament?

- Ans
- ☒ 1. participated
 - ☒ 2. participate
 - ☒ 3. participating
 - ☒ 4. are participating

Q.9 Choose the best option to combine the given sentences.

Question ID : 723053690

Ritu felt very offended. She stopped talking to her friend.

- Ans
- ☒ 1. Ritu felt so offended that she stopped talking to her friend.
 - ☒ 2. Ritu felt too offended she that stopped talking to her friend.
 - ☒ 3. Ritu felt very offended because she stopped talking to her friend.
 - ☒ 4. Ritu felt very offended that she stopped talking to her friend.

Q.10 Fill in the blank with the correct word.

Question ID : 723053683

The match was quite boring as we could easily predict who would be _____ winner.

- Ans
- ☒ 1. a
 - ☒ 2. the
 - ☒ 3. an
 - ☒ 4. some

Q.11 Choose the passive voice form of the given sentence.

Question ID : 723053688

My colleague and I decided we would continue our efforts to conquer the seas.

- Ans
- ☒ 1. My colleague and I decided we will continue our efforts to conquer the seas.
 - ☒ 2. It was decided by my colleague and me that we would continue our efforts to conquer the seas.
 - ☒ 3. It is decided by my colleague and me to continue our efforts to conquer the seas.
 - ☒ 4. My colleague and I decided we would be continuing our efforts to conquer the seas.

Q.12

Question ID : 723053687

In the following sentence four words or phrases have been underlined. One of them is incorrect. Choose the incorrect word or phrase from the given options.

It was a near-impossible mission, and once more fate handed me a failure when I could see the finish line and expect to win.

- Ans
- ☒ 1. once more
 - ☒ 2. handed me
 - ☒ 3. expect to win
 - ☒ 4. I could see

Q.13 Fill in the blank with the appropriate idiomatic expression.

Question ID : 723053694

Virat Kohli is _____ most batsmen in the world.

- Ans
- ☒ 1. hard and fast
 - ☒ 2. keeping an eye on
 - ☒ 3. leaving no stone unturned
 - ☒ 4. head and shoulders above

Q.14 Choose the correct antonym of the underlined word to fill in the blank.

Question ID : 723053682

It looked as if the answer to the quiz question was obvious but it turned out to be _____.

- Ans
- ☒ 1. persuasion
 - ☒ 2. predictable
 - ☒ 3. transparent
 - ☒ 4. ambiguous

Q.15 Choose the passage that is correctly punctuated.

Question ID : 723053691

Ans

☒ 1. It was very dark and windy. Aastha saw the dark clouds and shouted Mother! It's going to rain. Let's run indoors quickly.

☒ 2. It was very dark and windy. Aastha saw the dark clouds and shouted, "mother it's going to rain. Let's run indoors quickly."

☒ 3. It was very dark and windy. Aastha saw the dark clouds and shouted, "Mother! It's going to rain. Let's run indoors quickly."

☒ 4. It was very dark and windy. Aastha saw the dark clouds and shouted, "Mother! Its going to rain. Let's run indoors quickly."

Comprehension:

Read the following passage and answer the questions based on it.

My only work is to give you a clear-cut idea how you can become more conscious; I call it meditation. Working, walking, sitting. . . . I don't believe what others call meditation; that for ten minutes or 20 minutes you do it and then just be your ordinary self for 24 hours and again meditate for 20 minutes. It is like asking a person to breathe every day for 20 minutes and then forget all about it, because the person has to do many other things! And then next day she/he can breathe again in the morning! To me meditation is exactly like breathing. So whatsoever you are doing and wherever you are, do it more consciously.

Just try for few minutes to walk consciously; be alert at each step and you will be surprised that the quality of your walk is totally different. It is relaxed. There is no tension and there is a subtle joy that is arising out of your relaxed walking. And the more you become aware of this joy, the more you would like to be awake.

Eat with awareness. Thirty million people in America are suffering from overeating. Strange world we are living in; men are dying every day in Ethiopia because they don't have food, and millions are dying in America because they have too much food. These people who are suffering from obesity cannot resist eating. No doctor is going to help them, unless they become aware, while they are eating. They have to be aware that a man of awareness eats only as much as his body needs. He immediately feels that now there is no need, the hunger is gone, he is content.

SubQuestion No : 16

Q.1
6 One who is _____ is an aware person.

Question ID : 723053700

Ans

- ☒ 1. eats unconsciously
- ☒ 2. always alert
- ☒ 3. always tense
- ☒ 4. terribly overweight

Comprehension:

Read the following passage and answer the questions based on it.

My only work is to give you a clear-cut idea how you can become more conscious; I call it meditation. Working, walking, sitting. . . . I don't believe what others call meditation; that for ten minutes or 20 minutes you do it and then just be your ordinary self for 24 hours and again meditate for 20 minutes. It is like asking a person to breathe every day for 20 minutes and then forget all about it, because the person has to do many other things! And then next day she/he can breathe again in the morning! To me meditation is exactly like breathing. So whatsoever you are doing and wherever you are, do it more consciously.

Just try for few minutes to walk consciously; be alert at each step and you will be surprised that the quality of your walk is totally different. It is relaxed. There is no tension and there is a subtle joy that is arising out of your relaxed walking. And the more you become aware of this joy, the more you would like to be awake.

Eat with awareness. Thirty million people in America are suffering from overeating. Strange world we are living in; men are dying every day in Ethiopia because they don't have food, and millions are dying in America because they have too much food. These people who are suffering from obesity cannot resist eating. No doctor is going to help them, unless they become aware, while they are eating. They have to be aware that a man of awareness eats only as much as his body needs. He immediately feels that now there is no need, the hunger is gone, he is content.

SubQuestion No : 17

Q.1
7 Choose the most suitable option to complete the sentence given below.

Question ID : 723053697

When meditation is done with awareness, it:

Ans

- ☒ 1. is quite time consuming.
- ☒ 2. makes you a forgetful person.
- ☒ 3. is painful and tedious.
- ☒ 4. gives a great deal of satisfaction.

Comprehension:

Read the following passage and answer the questions based on it.

My only work is to give you a clear-cut idea how you can become more conscious; I call it meditation. Working, walking, sitting. . . . I don't believe what others call meditation; that for ten minutes or 20 minutes you do it and then just be your ordinary self for 24 hours and again meditate for 20 minutes. It is like asking a person to breathe every day for 20 minutes and then forget all about it, because the person has to do many other things! And then next day she/he can breathe again in the morning! To me meditation is exactly like breathing. So whatsoever you are doing and wherever you are, do it more consciously.

Just try for few minutes to walk consciously; be alert at each step and you will be surprised that the quality of your walk is totally different. It is relaxed. There is no tension and there is a subtle joy that is arising out of your relaxed walking. And the more you become aware of this joy, the more you would like to be awake.

Eat with awareness. Thirty million people in America are suffering from overeating. Strange world we are living in; men are dying every day in Ethiopia because they don't have food, and millions are dying in America because they have too much food. These people who are suffering from obesity cannot resist eating. No doctor is going to help them, unless they become aware, while they are eating. They have to be aware that a man of awareness eats only as much as his body needs. He immediately feels that now there is no need, the hunger is gone, he is content.

SubQuestion No : 18

Q.1
8 Choose the most suitable option to answer the question given below.

Question ID : 723053698

What is the irony of life mentioned by the writer?

- Ans
- ☒ 1. Many people are dying in Ethiopia
 - ☒ 2. Many Americans are dying due to overeating
 - ☒ 3.

While some people die of hunger, others die of overeating

- ☒ 4. Awareness is essential but it has no effect

Comprehension:

Read the following passage and answer the questions based on it.

My only work is to give you a clear-cut idea how you can become more conscious; I call it meditation. Working, walking, sitting. . . . I don't believe what others call meditation; that for ten minutes or 20 minutes you do it and then just be your ordinary self for 24 hours and again meditate for 20 minutes. It is like asking a person to breathe every day for 20 minutes and then forget all about it, because the person has to do many other things! And then next day she/he can breathe again in the morning! To me meditation is exactly like breathing. So whatsoever you are doing and wherever you are, do it more consciously.

Just try for few minutes to walk consciously; be alert at each step and you will be surprised that the quality of your walk is totally different. It is relaxed. There is no tension and there is a subtle joy that is arising out of your relaxed walking. And the more you become aware of this joy, the more you would like to be awake.

Eat with awareness. Thirty million people in America are suffering from overeating. Strange world we are living in; men are dying every day in Ethiopia because they don't have food, and millions are dying in America because they have too much food. These people who are suffering from obesity cannot resist eating. No doctor is going to help them, unless they become aware, while they are eating. They have to be aware that a man of awareness eats only as much as his body needs. He immediately feels that now there is no need, the hunger is gone, he is content.

SubQuestion No : 19

Q.1
9 Choose the most suitable option to answer the question given below.

Question ID : 723053699

What should you NOT do if you are obese?

- Ans
- ☒ 1. Resist eating too much
 - ☒ 2. Be led by your love for food
 - ☒ 3. Eat only what your body needs
 - ☒ 4. Consult a doctor

Comprehension:

Read the following passage and answer the questions based on it.

My only work is to give you a clear-cut idea how you can become more conscious; I call it meditation. Working, walking, sitting. . . . I don't believe what others call meditation; that for ten minutes or 20 minutes you do it and then just be your ordinary self for 24 hours and again meditate for 20 minutes. It is like asking a person to breathe every day for 20 minutes and then forget all about it, because the person has to do many other things! And then next day she/he can breathe again in the morning! To me meditation is exactly like breathing. So whatsoever you are doing and wherever you are, do it more consciously.

Just try for few minutes to walk consciously; be alert at each step and you will be surprised that the quality of your walk is totally different. It is relaxed. There is no tension and there is a subtle joy that is arising out of your relaxed walking. And the more you become aware of this joy, the more you would like to be awake.

Eat with awareness. Thirty million people in America are suffering from overeating. Strange world we are living in; men are dying every day in Ethiopia because they don't have food, and millions are dying in America because they have too much food. These people who are suffering from obesity cannot resist eating. No doctor is going to help them, unless they become aware, while they are eating. They have to be aware that a man of awareness eats only as much as his body needs. He immediately feels that now there is no need, the hunger is gone, he is content.

SubQuestion No : 20

Q.2
0 Complete the sentence by choosing a suitable option.

Question ID : 723053696

The writer believes that meditation _____.

- Ans
- ☒ 1. needs to be done for only 20 minutes a day
 - ☒ 2. is a process that requires consciousness
 - ☒ 3. must be done many times during the day
 - ☒ 4. can be done only when you are walking

Section : General Hindi

Comprehension:

निम्नलिखित गद्यांश को ध्यानपूर्वक पढ़कर पूछे गए प्रश्नों के उत्तर दीजिये।

हम एक ऐसे युग में जी रहे हैं, जहाँ एक तरफ भौतिक समृद्धि अपनी ऊँचाई पर है, तो दूसरी तरफ चारित्रिक पतन की गहराई है।

आधुनिकीकरण में उलझा मानव सफलता की नित नई परिभाषाएँ खोजता रहता है अपनी अंतहीन इच्छाओं के रेगिस्तान में भटकता रहता है। ऐसे समय में सच्ची सफलता और सुख-शांति की प्यास से व्याकुल व्यक्ति अनेक मानसिक रोगों का शिकार बनता जा रहा है। हममें से कितने लोगों को इस बात का ज्ञान है की जीवन में सफलता प्राप्त करना और सफल जीवन जीना, यह दोनों अलग-अलग बातें हैं! यह ज़रूरी नहीं कि जिसने अपने जीवन में साधारण कामनाओं को हासिल कर लिया हो, वह पूर्णतः संतुष्ट और प्रसन्न भी हो। अतः हमें गंभीरतापूर्वक इस बात को समझना चाहिए कि इच्छित फल को प्राप्त कर लेना ही सफलता नहीं है। जब तक हम अपने जीवन में नैतिक व आध्यात्मिक मूल्यों का सिंचन नहीं करेंगे, तब तक यथार्थ सफलता पाना हमारे लिए मुश्किल ही नहीं, अपितु असंभव कार्य हो जाएगा, क्योंकि बिना मूल्यों के प्राप्त सफलता केवल क्षणभंगुर सुख के समान रहती है। कुछ निराशावादी लोगों का कहना है कि हम सफल नहीं हो सकते, क्योंकि हमारी तकदीर या परिस्थितियाँ ही ऐसी हैं। परंतु यदि हम अपना ध्येय निश्चित करके उसे अपने मन में बिठा लें, तो फिर सफलता स्वयं हमारी ओर चलकर आएगी। सफल होना हर मनुष्य का जन्मसिद्ध अधिकार है, परंतु यदि हम अपनी विफलताओं के बारे में ही सोचते रहेंगे, तो सफलता को कभी हासिल नहीं कर पाएँगे। अतः विफलताओं की चिंता न करें, क्योंकि वे तो हमारे जीवन का सौंदर्य है और संघर्ष जीवन का काव्य है, कई बार प्रथम आघात में पत्थर नहीं टूट पाता, उसे तोड़ने के लिए आघात करने पड़ते हैं, इसलिए सदैव अपने लक्ष्य को सामने रख आगे बढ़ने की जरूरत है। कहा भी गया है कि जीवन में सकारात्मक कोशिश करने वालों की कभी हार नहीं होती।

SubQuestion No : 1

Q.1 चारित्रिक पतन का कारण है:

Question ID : 723053703

Ans ☒ 1. अंतहीन इच्छाएँ

☒ 2. आध्यात्मिक चिंतन

☒ 3. प्रगतशील विचार

Comprehension:

निम्नलिखित गद्यांश को ध्यानपूर्वक पढ़कर पूछे गए प्रश्नों के उत्तर दीजिये।

हम एक ऐसे युग में जी रहे हैं, जहाँ एक तरफ भौतिक समृद्धि अपनी ऊँचाई पर है, तो दूसरी तरफ चारित्रिक पतन की गहराई है।

आधुनिकीकरण में उलझा मानव सफलता की नित नई परिभाषाएँ खोजता रहता है अपनी अंतहीन इच्छाओं के रेगिस्तान में भटकता रहता है। ऐसे समय में सच्ची सफलता और सुख-शांति की प्यास से व्याकुल व्यक्ति अनेक मानसिक रोगों का शिकार बनता जा रहा है। हमसे कितने लोगों को इस बात का ज्ञान है कि जीवन में सफलता प्राप्त करना और सफल जीवन जीना, यह दोनों अलग-अलग बातें हैं! यह जरूरी नहीं कि जिसने अपने जीवन में साधारण कामनाओं को हासिल कर लिया हो, वह पूर्णतः संतुष्ट और प्रसन्न भी हो। अतः हमें गंभीरतापूर्वक इस बात को समझना चाहिए कि इच्छित फल को प्राप्त कर लेना ही सफलता नहीं है। जब तक हम अपने जीवन में नैतिक व आध्यात्मिक मूल्यों का सिंचन नहीं करेंगे, तब तक यथार्थ सफलता पाना हमारे लिए मुश्किल ही नहीं, अपितु असंभव कार्य हो जाएगा, क्योंकि बिना मूल्यों के प्राप्त सफलता केवल क्षणभंगुर सुख के समान रहती है। कुछ निराशावादी लोगों का कहना है कि हम सफल नहीं हो सकते, क्योंकि हमारी तकदीर या परिस्थितियाँ ही ऐसी हैं। परंतु यदि हम अपना ध्येय निश्चित करके उसे अपने मन में बिठा लें, तो फिर सफलता स्वयं हमारी ओर चलकर आएगी। सफल होना हर मनुष्य का जन्मसिद्ध अधिकार है, परंतु यदि हम अपनी विफलताओं के बारे में ही सोचते रहेंगे, तो सफलता को कभी हासिल नहीं कर पाएँगे। अतः विफलताओं की चिंता न करें, क्योंकि वे तो हमारे जीवन का सौंदर्य है और संघर्ष जीवन का काव्य है, कई बार प्रथम आघात में पत्थर नहीं टूट पाता, उसे तोड़ने के लिए आघात करने पड़ते हैं, इसलिए सदैव अपने लक्ष्य को सामने रख आगे बढ़ने की जरूरत है। कहा भी गया है कि जीवन में सकारात्मक कोशिश करने वालों की कभी हार नहीं होती।

SubQuestion No : 2

Q.2 परस्थितियों को असफलता का कारण मानते हैं:

Question ID : 723053704

Ans ✓ 1. निराश लोग

✗ 2. कर्मरत लोग

✗ 3. श्रमशील लोग

✗ 4. ध्येयनिष्ठ व्यक्ति

Comprehension:

निम्नलिखित गद्यांश को ध्यानपूर्वक पढ़कर पूछे गए प्रश्नों के उत्तर दीजिये।

हम एक ऐसे युग में जी रहे हैं, जहाँ एक तरफ भौतिक समृद्धि अपनी ऊँचाई पर है, तो दूसरी तरफ चारित्रिक पतन की गहराई है।

आधुनिकीकरण में उलझा मानव सफलता की नित नई परिभाषाएँ खोजता रहता है अपनी अंतहीन इच्छाओं के रेगिस्तान में भटकता रहता है। ऐसे समय में सच्ची सफलता और सुख-शांति की प्यास से व्याकुल व्यक्ति अनेक मानसिक रोगों का शिकार बनता जा रहा है। हममें से कितने लोगों को इस बात का ज्ञान है की जीवन में सफलता प्राप्त करना और सफल जीवन जीना, यह दोनों अलग-अलग बातें हैं! यह ज़रूरी नहीं कि जिसने अपने जीवन में साधारण कामनाओं को हासिल कर लिया हो, वह पूर्णतः संतुष्ट और प्रसन्न भी हो। अतः हमें गंभीरतापूर्वक इस बात को समझना चाहिए कि इच्छित फल को प्राप्त कर लेना ही सफलता नहीं है। जब तक हम अपने जीवन में नैतिक व आध्यात्मिक मूल्यों का सिंचन नहीं करेंगे, तब तक यथार्थ सफलता पाना हमारे लिए मुश्किल ही नहीं, अपितु असंभव कार्य हो जाएगा, क्योंकि बिना मूल्यों के प्राप्त सफलता केवल क्षणभंगुर सुख के समान रहती है। कुछ निराशावादी लोगों का कहना है कि हम सफल नहीं हो सकते, क्योंकि हमारी तकदीर या परिस्थितियाँ ही ऐसी हैं। परंतु यदि हम अपना ध्येय निश्चित करके उसे अपने मन में बिठा लें, तो फिर सफलता स्वयं हमारी ओर चलकर आएगी। सफल होना हर मनुष्य का जन्मसिद्ध अधिकार है, परंतु यदि हम अपनी विफलताओं के बारे में ही सोचते रहेंगे, तो सफलता को कभी हासिल नहीं कर पाएँगे। अतः विफलताओं की चिंता न करें, क्योंकि वे तो हमारे जीवन का सौंदर्य है और संघर्ष जीवन का काव्य है, कई बार प्रथम आघात में पत्थर नहीं टूट पाता, उसे तोड़ने के लिए आघात करने पड़ते हैं, इसलिए सदैव अपने लक्ष्य को सामने रख आगे बढ़ने की जरूरत है। कहा भी गया है कि जीवन में सकारात्मक कोशिश करने वालों की कभी हार नहीं होती।

SubQuestion No : 3

Q.3 'पत्थर तोड़ने के लिए कई आघात करने पड़ते हैं' का आशय है:

Question ID : 723053706

- ✓ 1. निरंतर श्रम करते रहना।
- ✗ 2. निरंतर सहायतार्थ पुकारना।
- ✗ 3. निरंतर पत्थर तोड़ते रहना।
- ✗ 4. निरंतर चोट खाते रहना।

Comprehension:

निम्नलिखित गद्यांश को ध्यानपूर्वक पढ़कर पूछे गए प्रश्नों के उत्तर दीजिये।

हम एक ऐसे युग में जी रहे हैं, जहाँ एक तरफ भौतिक समृद्धि अपनी ऊँचाई पर है, तो दूसरी तरफ चारित्रिक पतन की गहराई है।

आधुनिकीकरण में उलझा मानव सफलता की नित नई परिभाषाएँ खोजता रहता है अपनी अंतहीन इच्छाओं के रेगिस्तान में भटकता रहता है। ऐसे समय में सच्ची सफलता और सुख-शांति की प्यास से व्याकुल व्यक्ति अनेक मानसिक रोगों का शिकार बनता जा रहा है। हमसे कितने लोगों को इस बात का ज्ञान है की जीवन में सफलता प्राप्त करना और सफल जीवन जीना, यह दोनों अलग-अलग बातें हैं! यह ज़रूरी नहीं कि जिसने अपने जीवन में साधारण कामनाओं को हासिल कर लिया हो, वह पूर्णतः संतुष्ट और प्रसन्न भी हो। अतः हमें गंभीरतापूर्वक इस बात को समझना चाहिए कि इच्छित फल को प्राप्त कर लेना ही सफलता नहीं है। जब तक हम अपने जीवन में नैतिक व आध्यात्मिक मूल्यों का सिंचन नहीं करेंगे, तब तक यथार्थ सफलता पाना हमारे लिए मुश्किल ही नहीं, अपितु असंभव कार्य हो जाएगा, क्योंकि बिना मूल्यों के प्राप्त सफलता केवल क्षणभंगुर सुख के समान रहती है। कुछ निराशावादी लोगों का कहना है कि हम सफल नहीं हो सकते, क्योंकि हमारी तकदीर या परिस्थितियाँ ही ऐसी हैं। परंतु यदि हम अपना ध्येय निश्चित करके उसे अपने मन में बिठा लें, तो फिर सफलता स्वयं हमारी ओर चलकर आएगी। सफल होना हर मनुष्य का जन्मसिद्ध अधिकार है, परंतु यदि हम अपनी विफलताओं के बारे में ही सोचते रहेंगे, तो सफलता को कभी हासिल नहीं कर पाएँगे। अतः विफलताओं की चिंता न करें, क्योंकि वे तो हमारे जीवन का सौंदर्य है और संघर्ष जीवन का काव्य है, कई बार प्रथम आघात में पत्थर नहीं टूट पाता, उसे तोड़ने के लिए आघात करने पड़ते हैं, इसलिए सदैव अपने लक्ष्य को सामने रख आगे बढ़ने की जरूरत है। कहा भी गया है कि जीवन में सकारात्मक कोशिश करने वालों की कभी हार नहीं होती।

Q.4 दृढनिश्चय वाले लोग पा लेते हैं:

Question ID : 723053705

- Ans
- ✓ 1. सफलता
 - ✗ 2. विफलता
 - ✗ 3. निराशा
 - ✗ 4. हताशा

Comprehension:



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निम्नलिखित गद्यांश को ध्यानपूर्वक पढ़कर पूछे गए प्रश्नों के उत्तर दीजिये।

हम एक ऐसे युग में जी रहे हैं, जहाँ एक तरफ भौतिक समृद्धि अपनी ऊँचाई पर है, तो दूसरी तरफ चारित्रिक पतन की गहराई है।

आधुनिकीकरण में उलझा मानव सफलता की नित नई परिभाषाएँ खोजता रहता है अपनी अंतहीन इच्छाओं के रेगिस्तान में भटकता रहता है। ऐसे समय में सच्ची सफलता और सुख-शांति की प्यास से व्याकुल व्यक्ति अनेक मानसिक रोगों का शिकार बनता जा रहा है। हममें से कितने लोगों को इस बात का ज्ञान है कि जीवन में सफलता प्राप्त करना और सफल जीवन जीना, यह दोनों अलग-अलग बातें हैं! यह ज़रूरी नहीं कि जिसने अपने जीवन में साधारण कामनाओं को हासिल कर लिया हो, वह पूर्णतः संतुष्ट और प्रसन्न भी हो। अतः हमें गंभीरतापूर्वक इस बात को समझना चाहिए कि इच्छित फल को प्राप्त कर लेना ही सफलता नहीं है। जब तक हम अपने जीवन में नैतिक व आध्यात्मिक मूल्यों का सिंचन नहीं करेंगे, तब तक यथार्थ सफलता पाना हमारे लिए मुश्किल ही नहीं, अपितु असंभव कार्य हो जाएगा, क्योंकि बिना मूल्यों के प्राप्त सफलता केवल क्षणभंगुर सुख के समान रहती है। कुछ निराशावादी लोगों का कहना है कि हम सफल नहीं हो सकते, क्योंकि हमारी तकदीर या परिस्थितियाँ ही ऐसी हैं। परंतु यदि हम अपना ध्येय निश्चित करके उसे अपने मन में बिठा लें, तो फिर सफलता स्वयं हमारी ओर चलकर आएगी। सफल होना हर मनुष्य का जन्मसिद्ध अधिकार है, परंतु यदि हम अपनी विफलताओं के बारे में ही सोचते रहेंगे, तो सफलता को कभी हासिल नहीं कर पाएँगे। अतः विफलताओं की चिंता न करें, क्योंकि वे तो हमारे जीवन का सौंदर्य है और संघर्ष जीवन का काव्य है, कई बार प्रथम आघात में पत्थर नहीं टूट पाता, उसे तोड़ने के लिए आघात करने पड़ते हैं, इसलिए सदैव अपने लक्ष्य को सामने रख आगे बढ़ने की जरूरत है। कहा भी गया है कि जीवन में सकारात्मक कोशिश करने वालों की कभी हार नहीं होती।

SubQuestion No : 5

Q.5 यथार्थ सफलता मिलती है:

Question ID : 723053702

- Ans
- ☒ 1. इच्छाओं की पूर्ति से
 - ☒ 2. आधुनिकीकरण की प्रवृत्ति से
 - ☒ 3. नैतिक मूल्यों को अपनाने से

✗ 4. भौतिक समृद्धि से

Q.6 'बांसों उछालना' मुहावरे का अर्थ होता है:

Question ID : 723053720

- Ans
- ✗ 1. बांस की सहायता से ऊपर उठना
 - ✗ 2. उछल कर चढ़ना
 - ✗ 3. पागल हो जाना
 - ✓ 4. प्रसन्न होना

Q.7 'जिसमें संदेह न हो' उसे कहते हैं:

Question ID : 723053716

- Ans
- ✗ 1. आंत
 - ✓ 2. असंदिग्ध
 - ✗ 3. अनिर्णीत
 - ✗ 4. संदिग्ध

Q.8 'दुराचार' शब्द का विलोम है:

Question ID : 723053715

- Ans
- ✗ 1. कदाचार
 - ✗ 2. अविचार
 - ✓ 3. सदाचार
 - ✗ 4. अपचार

Q.9 'इस हाथ दे उस हाथ ले' लोकोक्ति का अर्थ है:

Question ID : 723053721

- Ans
- ✗ 1. चालाकी से काम निकालना
 - ✗ 2. हैरान रह जाना
 - ✓ 3. लेने का देना
 - ✗ 4. लाभ कमाना

Q.10 सदा बहुवचन में प्रयुक्त होने वाला शब्द है:

Question ID : 723053712

- Ans
- ✗ 1. सब्जी
 - ✗ 2. वेद
 - ✓ 3. दर्शन
 - ✗ 4. गीत

Q.11 निम्नलिखित में से कौन-सा शब्द स्त्रीलिंग है?

Question ID : 723053717

- Ans
- ✓ 1. बात
 - ✗ 2. दांत

- ✗ 3. मात
✗ 4. गात

Q.12 'सदधर्म' शब्द में कौन-सा समास है?

Question ID : 723053709

- Ans
- ✗ 1. तत्पुरुष
✗ 2. द्वन्द्व
✗ 3. बहुव्रीहि
✓ 4. कर्मधारय

Q.13 निम्नलिखित वाक्यों मेंसे शुद्धवाक्य को छांटिए:

Question ID : 723053719

- Ans
- ✗ 1. मेरे को इसका उत्तर नहीं आता।
✗ 2. फलों का रस मेरे को नहीं पीना।
✓ 3. आज हमारे घर बहुत मेहमान आएँगे।
✗ 4. उसे पैसे निकालने चाहिएँ।

Q.14 निम्नलिखित में से भाववाचक संज्ञा शब्द की पहचान करें।

Question ID : 723053713

- Ans
- ✗ 1. नुकीला
✗ 2. घर
✓ 3. क्रोध
✗ 4. शूर

Q.15 निम्नलिखित में से कौन-सा शब्द पुलिंग है?

Question ID : 723053718

- Ans
- ✓ 1. बहाव
✗ 2. उलझन
✗ 3. चमक
✗ 4. भौंह

Q.16 'मित्र' शब्द का पर्यायवाची शब्द नहीं है:

Question ID : 723053714

- Ans
- ✗ 1. गीत
✓ 2. सहपाठी
✗ 3. सखा
✗ 4. दोस्त

Q.17 'माली' शब्द का बहुवचन (अभिभक्ति) होगा:

Question ID : 723053711

- Ans
- ✗ 1. मालिँ

- ✗ 2. मालियों
- ✓ 3. माली
- ✗ 4. मालिया

Q.18 'उज्ज्वल' का संधि विच्छेद होगा:

Question ID : 723053710

- Ans
- ✗ 1. उज्+ज्वल
 - ✗ 2. उद+ज्वल
 - ✓ 3. उत्+ज्वल
 - ✗ 4. उत्+जवल

Q.19 निम्नलिखित में से 'तत्सम' शब्द की पहचान करें।

Question ID : 723053707

- Ans
- ✗ 1. सात
 - ✗ 2. साँस
 - ✗ 3. ब्याह
 - ✓ 4. मनुष्य

Q.20 निम्नलिखित में से कौन सा शब्द तद्भव है?

Question ID : 723053708

- Ans
- ✗ 1. शाक
 - ✓ 2. मुँह
 - ✗ 3. सूत्र
 - ✗ 4. मित्र

Section : Subject Related

Q.1 Let $A = \mathbb{Z} \setminus \{0\}$ denote the set of all NON-zero integers. Let \approx be the relation on $A \times A$ defined by $(a, b) \approx (c, d)$ if $ad = bc$. Then \approx is:

Question ID : 723053734

- Ans
- ✗ 1. reflexive, antisymmetric and transitive
 - ✗ 2. reflexive, transitive but not symmetric
 - ✓ 3. an equivalence relation
 - ✗ 4. reflexive, symmetric but not transitive

Q.2 Let $p(A)$ be the power set of a set $A = \{1, 2, \dots, 5\}$. The number of distinct elements of the sub-collection of $p(A)$, where each element of that subcollection consists of 1 and 2 other elements of A , is:

Question ID : 723053730

- Ans
- ✓ 1. 6
 - ✗ 2. 5
 - ✗ 3. 8
 - ✗ 4. 4

Q.3 The relation between the sets $A = \{2, 3, 4, 5\}$ and $B = \{1, 2, 3, \dots, 9\}$ is:

Question ID : 723053722

- Ans
- ✓ 1. $A \subset B$

- ~~✗~~ 2. $A \cup B = A$
~~✗~~ 3. $A \cap B = B$
~~✗~~ 4. $A \supset B$

Q.4 The possible number of relations from a set $A = \{u, v, w\}$ to a set $B = \{x, y\}$ is:

Question ID : 723053733

- Ans ~~✗~~ 1. 6
~~✗~~ 2. 16
~~✗~~ 3. 32
 ✓ 4. 64

Q.5 Let $A = \{1, 2, 3\}$. A function f from A to A is defined by $f(1) = 2$, $f(2) = 1$ and $f(3) = 3$. The inverse of the function f is:

Question ID : 723053738

- Ans ~~✗~~ 1. $\{(1, 2), (2, 1), (2, 3)\}$
 ✓ 2. $\{(1, 2), (2, 1), (3, 3)\}$
~~✗~~ 3. $\{(1, 2), (2, 2), (3, 3)\}$
~~✗~~ 4. $\{(1, 1), (2, 1), (3, 3)\}$

Q.6 If A and B are finite sets, then $(A \cup B)$ and $(A \cap B)$ are finite and $n(A \cup B)$ is equal to:

Question ID : 723053726

- Ans ~~✗~~ 1. $n(A) + n(B)$
 ✓ 2. $n(A) + n(B) - n(A \cap B)$
~~✗~~ 3. $n(A \cap B) - n(A) + n(B)$
~~✗~~ 4. $n(A) - n(B)$

Q.7 When $n(A) = 3$ and $n(B) = 5$, then the number of injection functions that can be defined from A to B is:

Question ID : 723053739

- Ans ~~✗~~ 1. 30
~~✗~~ 2. 120
~~✗~~ 3. 40
 ✓ 4. 60

Q.8 Let R be a relation on a set $A = \{2, 3, 4, 6\}$, defined as " x divides y ". Then a set of ordered pairs is of the form:

Question ID : 723053732

- Ans ~~✗~~ 1. $\{(2, 4), (2, 6), (3, 3), (3, 6), (4, 6)\}$
 ✓ 2. $\{(2, 2), (2, 4), (2, 6), (3, 3), (3, 6), (4, 4), (6, 6)\}$
~~✗~~ 3. $\{(2, 4), (2, 6), (3, 6), (4, 2), (4, 6), (6, 2), (6, 3)\}$
~~✗~~ 4. $\{(2, 4), (2, 6), (3, 6), (4, 6)\}$

Q.9 Let $R = \{(1, 1), (1, 2), (1, 3), (2, 4), (3, 2)\}$ and $S = \{(1, 3), (1, 4), (2, 3), (3, 1), (4, 1)\}$ be the relations on a set $A = \{1, 2, 3, 4\}$. The composition SoR of R and S is:

Question ID : 723053736

- Ans ~~✗~~ 1. $\{(1, 1), (1, 3), (1, 2), (2, 1), (3, 3)\}$
~~✗~~ 2. $\{(1, 1), (1, 2), (1, 4), (2, 1), (3, 3)\}$
 ✓ 3. $\{(1, 1), (1, 3), (1, 4), (2, 1), (3, 3)\}$
~~✗~~ 4. $\{(1, 2), (1, 3), (1, 4), (2, 1), (3, 3)\}$

Q.10 The number of subsets of the set $A = \{a_1, a_2, \dots, a_n\}$ which contain even number of elements is:

Question ID : 723053723

- Ans
- ☒ 1. 2^{n-2}
 - ☒ 2. 2^n
 - ☒ 3. 2^{n-1}
 - ☒ 4. $2^n - 1$

Q.11 Using mathematical induction, the value of $2 + 5 + 8 + \dots + (3n-1)$ comes out to be:

Question ID : 723053741

- Ans
- ☒ 1. $\frac{n(3n-1)}{2}$
 - ☒ 2. $\frac{n(n+2)}{2}$
 - ☒ 3. $\frac{n(2n+1)}{3}$
 - ☒ 4. $\frac{n(3n+1)}{2}$

Q.12 Consider $n(U) = 80$, $n(A) = 40$, $n(B) = 55$ and $n(A \cap B) = 20$. Then the value of $n(A \oplus B)$ is:

Question ID : 723053725

- Ans
- ☒ 1. 25
 - ☒ 2. 45
 - ☒ 3. 55
 - ☒ 4. 35

Q.13 The formula $\left(\frac{A}{B}\right)^c = A \cap B^c$ represents the difference operation in terms of the operations of intersection and complement. Then the formula for the union $A \cup B$ in terms of the operations of intersection and complement is:

Question ID : 723053729

- Ans
- ☒ 1. $(A^c \cap B^c)^c$
 - ☒ 2. $(A \cap B^c)^c$
 - ☒ 3. $A^c \cap B^c$
 - ☒ 4. $A^c \cap B$

Q.14 If A and B are nonempty sets, then $\frac{(A \cup B)}{(A \cap B)}$ is equal to:

Question ID : 723053724

- Ans
- ☒ 1. $((A \cap B) \cup B)$
 - ☒ 2. $((A \cup B) \cap A)$
 - ☒ 3. $\left(\frac{A}{B}\right) \cap \left(\frac{B}{A}\right)$
 - ☒ 4. $\left(\frac{A}{B}\right) \cup \left(\frac{B}{A}\right)$

Q.15 Let R be a relation from a set $A = \{1, 2, 3, 4\}$ to a set $B = \{u, v, w, x\}$ defined by $R = \{(1, u), (1, v), (3, v), (3, x), (4, v)\}$. The domain of R and range of R, are, respectively:

Question ID : 723053735

- Ans
- ☒ 1. $\{1, 3, 4\}; \{u, w, x\}$
 - ☒ 2. $\{1, 2, 4\}; \{u, v, x\}$
 - ☒ 3. $\{1, 2, 3, 4\}; \{u, v, w, x\}$

✓ 4. $\{1,3,4\}; \{u,v,x\}$

Q.16 The power set of a set A having four distinct elements is:

Question ID : 723053727

- Ans
- ✗ 1. 32
 - ✓ 2. 16
 - ✗ 3. 8
 - ✗ 4. 14

Q.17 Let $U = \{1,2,\dots,9\}$ be the universal set. Let $A = \{1,2,5,6\}$, $B = \{2,5,7\}$ and $C = \{1,3,5,7,9\}$, then $\left(\frac{B \oplus C}{A}\right) = ?$

Question ID : 723053728

- Ans
- ✗ 1. $\{1, 6\}$
 - ✗ 2. $\{2, 3, 6, 7, 9\}$
 - ✗ 3. $\{1, 6, 7\}$
 - ✓ 4. $\{3, 9\}$

Q.18 Consider $n(U) = 20$, $n(A) = 12$, $n(B) = 9$ and $n(A \cap B) = 4$. Then the value of is $n\left(\frac{A}{B}\right)$

Question ID : 723053731

- Ans
- ✗ 1. 11
 - ✗ 2. 17
 - ✓ 3. 8
 - ✗ 4. 3

Q.19 If f is a function satisfying $2f(x) - 3f\left(\frac{1}{x}\right) = x^2$ for any non-zero value of x , then the value of $f(2)$ is equal to:

Question ID : 723053740

- Ans
- ✗ 1. $\frac{-7}{8}$
 - ✓ 2. $\frac{-7}{4}$
 - ✗ 3. 4
 - ✗ 4. -2

Q.20 If set A has m elements and set B has n elements, then the possible number of distinct functions from A to B is:

Question ID : 723053737

- Ans
- ✗ 1. mn
 - ✗ 2. m^n
 - ✗ 3. 2^{mn}
 - ✓ 4. n^m

Section : Subject Related

Q.1 If the sum and product of any two distinct complex numbers are 4 and 8 respectively, then the numbers are:

Question ID : 723053759

- Ans
- ✗ 1. $2 + 3i; 2 - 3i$
 - ✗ 2. $1 + 2i; 3 - 2i$
 - ✗ 3. $3 + 2i; 1 - 2i$
 - ✓ 4. $2 + 2i; 2 - 2i$

Q.2 The number of odd three-digit positive integers that have no repeated digits is:

Question ID : 723053748

- Ans
- ☒ 1. 160
 - ☒ 2. 128
 - ☒ 3. 320
 - ☒ 4. 240

Q.3 The rectangular form of $10\angle - 30^\circ$ is given by:

Question ID : 723053756

- Ans
- ☒ 1. $-5\sqrt{3} + 5i$
 - ☒ 2. $-5\sqrt{3} - 5i$
 - ☒ 3. $5\sqrt{3} - 5i$
 - ☒ 4. $5\sqrt{3} + 5i$

Q.4 The number of words that can be formed by using the letters of the word "MATHEMATICS" that start as well as end with T is:

Question ID : 723053744

- Ans
- ☒ 1. 80,720
 - ☒ 2. 90,720
 - ☒ 3. 20,860
 - ☒ 4. 37,528

Q.5 In how many ways can 7 gentlemen and 7 ladies sit down at a round table, NO 2 ladies being together?

Question ID : 723053751

- Ans
- ☒ 1. $7! \times 7!$ ways
 - ☒ 2. $6!$ ways
 - ☒ 3. $6! \times 6!$ ways
 - ☒ 4. $6! \times 7!$ ways

Q.6 How do we express $\frac{(1+2i)^3}{(1+i)(2-i)}$ in the form of a complex number $a + ib$?

Question ID : 723053752

- Ans
- ☒ 1. $\left(\frac{-7}{2}\right) - i\left(\frac{1}{2}\right)$
 - ☒ 2. $\left(\frac{7}{2}\right) - i\left(\frac{1}{2}\right)$
 - ☒ 3. $\left(\frac{7}{2}\right) + i\left(\frac{1}{2}\right)$
 - ☒ 4. $\left(\frac{-7}{2}\right) + i\left(\frac{1}{2}\right)$

Q.7 Using mathematical induction, the value of $1^3 + 2^3 + \dots + n^3$ is:

Question ID : 723053742

- Ans
- ☒ 1. $\frac{n^2(n+1)^2}{4}$
 - ☒ 2. $\frac{n(n+1)(2n+1)}{6}$

☒ 3. $\frac{n^2(n^2 + 1)}{4}$

☒ 4. $\frac{n(n + 2)}{4}$

Q.8 The number of positive integers not exceeding 1,000, which are divisible by 7 or 11, is:

Question ID : 723053746

Ans ☒ 1. 220

☒ 2. 240

☒ 3. 210

☒ 4. 120

Q.9 The number of permutations can be made out of the letters word "COMPUTER" as:

Question ID : 723053749

Ans ☒ 1. 10,080

☒ 2. 40,320

☒ 3. 720

☒ 4. 5,040

Q.10 The principal argument of the complex number $\frac{(1 + 2i)}{[1 - (1 - i)^2]}$ is:

Question ID : 723053753

Ans ☒ 1. $-\infty$

☒ 2. ∞

☒ 3. 0

☒ 4. 1

Q.11 In how many ways can 12 balloons be distributed at a birthday party of 10 children?

Question ID : 723053747

Ans ☒ 1. 48 ways

☒ 2. 56 ways

☒ 3. 55 ways

☒ 4. 45 ways

Q.12 If ω is a complex cube root of unity, then the value of $(1 - \omega)^6$ is:

Question ID : 723053761

Ans ☒ 1. -27

☒ 2. 0

☒ 3. -9

☒ 4. 6

Q.13 The polar form of the complex number $\left(\frac{2+i}{3-i}\right)^2$ is:

Question ID : 723053754

Ans ☒ 1. $\frac{1}{2} \left(\cos \frac{\pi}{4} + i \sin \frac{\pi}{4} \right)$

☒ 2. $\frac{1}{2} \left(\cos \frac{\pi}{4} - i \sin \frac{\pi}{4} \right)$

✓ 3. $\frac{1}{2} \left(\cos \frac{\pi}{2} + i \sin \frac{\pi}{2} \right)$

✗ 4. $\frac{1}{2} \left(\cos \frac{\pi}{2} - i \sin \frac{\pi}{2} \right)$

Q.14 The number of ways of choosing m objects out of $(3m+1)$ objects, of which m are identical and $(2m+1)$ are distinct, is:

Question ID : 723053745

Ans ✓ 1. 2^{2m}

✗ 2. 2^{m+2}

✗ 3. $2^{2(m+1)}$

✗ 4. $2^{2m} - 1$

Q.15 How many integer solutions are there for the equation $x + y + z = 15$, where $x \geq 0, y \geq 0, z \geq 0$?

Question ID : 723053743

Ans ✗ 1. 1

✗ 2. 6

✗ 3. 15

✓ 4. 136

Q.16 If $\arg(z + 2i) = \frac{\pi}{4}$, $\arg(z - 2i) = \frac{3\pi}{4}$, then the value of z is:

Question ID : 723053760

Ans ✗ 1. -1

✗ 2. 1

✓ 3. 2

✗ 4. 0

Q.17 The number of ways to distribute 20 identical balls in 4 different boxes such that no box remains empty is:

Question ID : 723053750

Ans ✓ 1. 969

✗ 2. 323

✗ 3. 52

✗ 4. 696

Q.18 In an Argand diagram, one vertex of an equilateral triangle is $(1 + i\sqrt{3})$, and assume that the origin is the circumcenter of the triangle. Then the complex numbers represented by other vertices are:

Question ID : 723053758

Ans ✗ 1. $2 + i0; \sqrt{3} - i$

✗ 2. $\sqrt{3} + i0; 1 - i\sqrt{3}$

✓ 3. $-2 + 0i; 1 - i\sqrt{3}$

✗ 4. $0 + 2i; 1 - i\sqrt{3}$

Q.19 If $\left(\frac{1-i}{1+i} \right)^n = 1$, then the smallest positive integer n is:

Question ID : 723053757

Ans ✗ 1. 3

✗ 2. 1

✗ 3. 2

✓ 4. 4

Q.20 The modulus of the complex number $(1 - \cos \alpha) + i \sin \alpha$ is:

Question ID : 723053755

Ans

- ☒ 1. $\sin\left(\frac{\alpha}{2}\right)$
- ☒ 2. $\cos\left(\frac{\alpha}{2}\right)$
- ☒ 3. $2 \sin \alpha$
- ☒ 4. $2 \sin\left(\frac{\alpha}{2}\right)$

Section : Subject Related

Q.1 When 2^{2000} is divided by 17, then the remainder is:

Question ID : 723053770

Ans

- ☒ 1. 1
- ☒ 2. 5
- ☒ 3. 2
- ☒ 4. 9

Q.2 Which is true with regard to the system of the inequalities $\frac{x}{2x+1} \geq 0.25$; $\frac{6x}{4x-1} < 0.5$?

Question ID : 723053764

Ans

- ☒ 1. $x \in (-0.5, 0.5)$
- ☒ 2. There is no solution
- ☒ 3. $x \in (-0.125, 0.25)$
- ☒ 4. $x < -0.5$ or $x \geq 0.5$

Q.3 The possible solution of the inequality $|x + 1| + |x| > 3$ is:

Question ID : 723053763

Ans

- ☒ 1. $x \notin (1, \infty)$
- ☒ 2. $x \notin (-\infty, -2)$
- ☒ 3. $x \in (-\infty, -1) \cup (1, \infty)$
- ☒ 4. $x \in (-\infty, -2) \cup (1, \infty)$

Q.4 The largest term in the Binomial expansion of $(3 + 2x)^{50}$, when $x = \frac{1}{5}$, is:

Question ID : 723053771

Ans

- ☒ 1. sixth term
- ☒ 2. eighth term
- ☒ 3. fifth term
- ☒ 4. third term

Q.5 The number of rational and irrational terms in the Binomial expansion of $\left(5^{\frac{1}{4}} + 2^{\frac{1}{2}}\right)^{100}$ are respectively.

Question ID : 723053768

Ans

- ☒ 1. 4, 97
- ☒ 2. 8, 93
- ☒ 3. 6, 95
- ☒ 4. 15, 86

Q.6

If the 6th term in the Binomial expansion of $\left(\frac{1}{x^3} + x^2 \log_{10} x\right)^8$ is 5,600, then the value of x is:

Question ID : 723053767

Ans

- ☒ 1. $\sqrt{2}$
☒ 2. 5
☒ 3. 10
☒ 4. $\sqrt{5}$

Q.7

Suppose that a, b, c are in A.P. and a^2, b^2, c^2 are in G.P. If $a < b < c$ and $a + b + c = \frac{1}{\sqrt{2}}$, then the value of a is given by:

Question ID : 723053773

Ans

- ☒ 1. $\frac{1}{2\sqrt{3}}$
☒ 2. $\frac{1}{2} - \frac{1}{\sqrt{3}}$
☒ 3. $\frac{1}{2}(1 - \sqrt{2})$
☒ 4. $\frac{1}{2\sqrt{2}}$

Q.8

The sum of the 24 terms of the series $\sqrt{2} + \sqrt{8} + \sqrt{18} + \sqrt{32} + \dots$ is:

Question ID : 723053774

Ans

- ☒ 1. $500\sqrt{2}$
☒ 2. $100\sqrt{2}$
☒ 3. $300\sqrt{2}$
☒ 4. $200\sqrt{2}$

Q.9

The sum of the series $\cos x + \frac{1}{3}\cos^3 x + \frac{1}{5}\cos^5 x + \dots \infty$, where x is real, is equal to:

Question ID : 723053779

Ans

- ☒ 1. $\ln(1 - \cos x)$
☒ 2. $\ln\left(\cot\left(\frac{x}{2}\right)\right)$
☒ 3. $\ln\left(\tan\left(\frac{x}{2}\right)\right)$
☒ 4. $\ln(1 + \cos x)$

Q.10

Solve the absolute value inequality $3|2x + 6| < 42$.

Question ID : 723053762

Ans

- ☒ 1. $x \in (5, 2)$
☒ 2. $x \in (-5, 4)$
☒ 3. $x \in (-10, 2)$
☒ 4. $x \in (-10, 4)$

Q.11

If a is sufficiently large when compare with b , and $\sqrt{\left(\frac{a}{a-b}\right)} + \sqrt{\left(\frac{a}{a+b}\right)} = 2 + k\left(\frac{b}{a}\right)^2$, then the value of ' k ' is:

Question ID : 723053772

Ans

- ✗ 1. $\frac{5}{6}$
- ✗ 2. $\frac{2}{3}$
- ✗ 3. $\frac{4}{5}$
- ✓ 4. $\frac{3}{4}$

Q.12 The sum of the last 20 coefficients in the Binomial expansion of $(1+x)^{39}$, when expanded in the ascending powers of x , is:

Question ID : 723053769

- Ans ✗ 1. 2^{18}
- ✗ 2. 2^{39}
- ✗ 3. 2^{17}
- ✓ 4. 2^{38}

Q.13 The sum of the series $1 + \frac{3}{1!} + \frac{5}{2!} + \frac{7}{3!} + \dots \infty$ is:

Question ID : 723053778

- Ans ✗ 1. $\frac{e}{2}$
- ✓ 2. $3e$
- ✗ 3. $2e$
- ✗ 4. $e - 1$

Q.14 The series $x - \frac{x^2}{2} + \frac{x^3}{3} - \frac{x^4}{4} + \frac{x^5}{5} + \dots$ converges in:

Question ID : 723053781

- Ans ✓ 1. $-1 < x \leq 1$
- ✗ 2. $2 < x < \infty$
- ✗ 3. $x < -1$
- ✗ 4. $|x| > 1$

Q.15 The sum of the series $\frac{1}{2} - \frac{1}{2} \cdot \frac{1}{2^2} + \frac{1}{3} \cdot \frac{1}{2^3} - \frac{1}{4} \cdot \frac{1}{2^4} + \dots$ is equal to:

Question ID : 723053780

- Ans ✗ 1. $\ln(2)$
- ✗ 2. $\ln\left(\frac{2}{3}\right)$
- ✗ 3. $\ln\left(\frac{1}{2}\right)$
- ✓ 4. $\ln\left(\frac{3}{2}\right)$

Q.16 Use Cauchy-Schwarz inequality to determine the value of $a^2 + b^2 + c^2$, where $a, b, c > 0$ and $a + b + c = 3$

Question ID : 723053765

- Ans ✗ 1. greater than 4
- ✓ 2. greater than or equal to 3

✗ 3. less than 2

✗ 4. less than or equal to 4

Q.17 The series whose n th term is of the form $\sqrt{(n^3 + 1)} - \sqrt{n^3}$ is:

Question ID : 723053775

Ans ✓ 1. Convergent

✗ 2. Oscillatory

✗ 3. Conditionally convergent

✗ 4. Divergent

Q.18 If A_1 and A_2 are two Arithmetic means, and G_1 and G_2 are two Geometric means between two positive numbers a and b , then $\frac{A_1 + A_2}{G_1 G_2}$ is equal to:

Question ID : 723053777

Ans ✗ 1. $\frac{a+b}{2ab}$

✗ 2. $\frac{2ab}{a+b}$

✓ 3. $\frac{a+b}{ab}$

✗ 4. $\frac{ab}{a+b}$

Q.19 If $\log_{\sqrt{5}}(x) + \log_{3\sqrt{5}}(x) + \log_{4\sqrt{5}}(x) + \dots$ up to 7 terms = 35, then the value of x is:

Question ID : 723053776

Ans ✗ 1. 25

✗ 2. 75

✗ 3. 125

✓ 4. 5

Q.20 The solution of polynomial inequality $f(x) = (x+1)(x-2)^2(x+3) \leq 0$ is:

Question ID : 723053766

Ans ✓ 1. $x \in [-3, -1]$

✗ 2. $x \in (3, \infty)$

✗ 3. $x \in (-\infty, -3)$

✗ 4. $x \in (0, 2)$

Section : Subject Related

Q.1 If a , b and c are any three complex numbers such that $a^2 + b^2 + c^2 = 0$ and $\begin{vmatrix} b^2 + c^2 & ab & ca \\ ab & c^2 + a^2 & bc \\ ca & bc & a^2 + b^2 \end{vmatrix} = k(abc)^2$, then the value of k is:

Question ID : 723053800

Ans ✗ 1. 3

✗ 2. 1

✗ 3. -2

✓ 4. 4

Q.2

Let a, b and c be real numbers such that a and b are distinct. Then the roots of the equation $2(a-b)x^2 - 11(a+b+c)x - 3(a-b) = 0$ are:

Question ID : 723053793

- Ans
- ☒ 1. Real and unequal
 - ☐ 2. Real and equal
 - ☐ 3. Both real and imaginary
 - ☐ 4. Purely imaginary

Q.3 The sum of the positive integer divisors of 200 and the number of positive integer divisors of 200, respectively, are:

Question ID : 723053788

- Ans
- ☒ 1. 465, 12
 - ☐ 2. 455, 21
 - ☐ 3. 456, 12
 - ☐ 4. 435, 21

Q.4 If a, b and c are real numbers, then both the roots of the equation $(x-a)(x-b) + (x-b)(x-c) + (x-c)(x-a) = 0$

Question ID : 723053794

- Ans
- ☒ 1. Are real
 - ☐ 2. Do not exist
 - ☐ 3. Are positive
 - ☐ 4. Are negative

Q.5 The number of real values of x satisfying the equation $2\left(x^2 + \frac{1}{x^2}\right) - 9\left(x + \frac{1}{x}\right) + 14 = 0$ is given by:

Question ID : 723053789

- Ans
- ☐ 1. 4
 - ☐ 2. 1
 - ☒ 3. 3
 - ☐ 4. 2

Q.6 The greatest common divisor of three integers 105, 140 and 350 is:

Question ID : 723053783

- Ans
- ☐ 1. 5
 - ☐ 2. 15
 - ☒ 3. 35
 - ☐ 4. 70

Q.7 Let a and b be the roots of the equation $x^2 + px + 1 = 0$. Let c and d be the roots of the equation $x^2 + qx + 1 = 0$. Then the value of $(a-c)(b-c)(a+d)(b+d)$ is equal to:

Question ID : 723053792

- Ans
- ☐ 1. $p^2 + q^2$
 - ☐ 2. $p^2 - q^2$
 - ☒ 3. $-p^2 + q^2$
 - ☐ 4. $-p^2 - q^2$

Q.8 The prime factorization of 42833 is given by:

Question ID : 723053785

- Ans
- ☐ 1. 7, 21, 299
 - ☐ 2. 7, 21, 291

✗ 3. 7. 21. 219

✓ 4. 7. 29. 211

Q.9 What is the maximum number of divisions used by the Euclidean algorithm to find the greatest common divisor of two positive integers 252 and 198?

Question ID : 723053784

- Ans
- ✓ 1. 4
 - ✗ 2. 36
 - ✗ 3. 16
 - ✗ 4. 12

Q.10 The product of the roots of the equation $x^2 - 3kx + 2e^{4\ln(k)} = 1$ is 31. Then the sum of the root is:

Question ID : 723053795

- Ans
- ✗ 1. 4
 - ✗ 2. 2
 - ✓ 3. 6
 - ✗ 4. 5

Q.11 The solutions of the linear congruence $7x \equiv 22 \pmod{31}$ is:

Question ID : 723053787

- Ans
- ✓ 1. $x \equiv 12 \pmod{31}$
 - ✗ 2. $x \equiv 21 \pmod{31}$
 - ✗ 3. $x \equiv 12 \pmod{21}$
 - ✗ 4. $x \equiv 196$

Q.12 The positive value of $x = \sqrt{12 + \sqrt{12 + \sqrt{12 + \dots \text{up to } \infty}}}$ is:

Question ID : 723053797

- Ans
- ✗ 1. 2
 - ✗ 2. 1
 - ✓ 3. 4
 - ✗ 4. 3

Q.13 The number of real solutions of the equation $\sqrt{x+9} + \sqrt{4+x} = 5$ is:

Question ID : 723053791

- Ans
- ✓ 1. 1
 - ✗ 2. 3
 - ✗ 3. 2
 - ✗ 4. 0

Q.14 If α, β and γ are the roots of the equation $x^3 + px^2 + q = 0$, where $q \neq 0$, then the value of $\begin{vmatrix} 1 & \frac{1}{\alpha} & \frac{1}{\gamma} \\ \frac{1}{\alpha} & \frac{1}{\beta} & \frac{1}{\gamma} \\ \frac{1}{\beta} & \frac{1}{\gamma} & \frac{1}{\alpha} \end{vmatrix}$ is equal to:

Question ID : 723053801

- Ans
- ✗ 1. $\frac{1}{q}$
 - ✗ 2. $\frac{p}{q}$
 - ✓ 3. 0

☒ 4. $\frac{1}{p}$

Q.15 When $a + b + c = 0$, then the quadratic equation $3ax^2 + 2bx + c = 0$ has:

Question ID : 723053799

- Ans
- ☒ 1. One root in $[-2, -1]$ and other root in $[2, 3]$
 - ☒ 2. One root in $[-2, -1]$ and other root in $[1, 2]$
 - ☒ 3. Imaginary roots
 - ☒ 4. At least one root in $[0, 1]$

Q.16 When the quadratic equations $x^2 - 7x + k = 0$ and $x^2 - 11x + 2k = 0$ have a common root, then the value of k is:

Question ID : 723053798

- Ans
- ☒ 1. 12, -1
 - ☒ 2. 0, 14
 - ☒ 3. 0, 12
 - ☒ 4. 1, -12

Q.17 The number of real roots of the equation $(7 + 4\sqrt{3})^{|x|-6} + (7 - 4\sqrt{3})^{|x|-6} = 14$ is:

Question ID : 723053796

- Ans
- ☒ 1. 4
 - ☒ 2. 1
 - ☒ 3. 3
 - ☒ 4. 2

Q.18 If c and d are integers and $c = dq + r$, then:

Question ID : 723053782

- Ans
- ☒ 1. $(c, d) = (d, r)$
 - ☒ 2. $(c, r) = (d, r)$
 - ☒ 3. $(c, q) = (d, r)$
 - ☒ 4. $(c, d) = (d, q)$

Q.19 Every prime divisor of the Fermat number $F_n = 2^{2^n} + 1$ is of the form:

Question ID : 723053786

- Ans
- ☒ 1. $2^{n+2}k + 1$
 - ☒ 2. $2^{2n}k + 1$
 - ☒ 3. $2^{2n+1}k + 1$
 - ☒ 4. $2^{n+1}k + 1$

Q.20 The number of real solutions of the equation $\frac{1}{x+1} - \frac{1}{x+2} = \frac{1}{x+4} - \frac{1}{x+5}$ is:

Question ID : 723053790

- Ans
- ☒ 1. 1
 - ☒ 2. 2
 - ☒ 3. 3
 - ☒ 4. 4

Q.1 One radian is equal to:

Question ID : 723053820

- Ans
- ☒ 1. 360°
 - ☒ 2. 180°
 - ☒ 3. $57^\circ 17' 45''$
 - ☒ 4. $\frac{3\pi}{2}$

Q.2 If A, B and C are the angles of a triangle ABC, then the value of $\begin{vmatrix} \sin^2 A & \cot A & 1 \\ \sin^2 B & \cot B & 1 \\ \sin^2 C & \cot C & 1 \end{vmatrix}$ is:

Question ID : 723053802

- Ans
- ☒ 1. $8 \sin A \sin B \sin C$
 - ☒ 2. 0
 - ☒ 3. $-4 \sin A \sin B \sin C$
 - ☒ 4. $1 + 4 \cos A \cos B \cos C$

Q.3 Which of the following statements is not true?

Question ID : 723053805

- Ans
- ☒ 1. $\text{adj}(AB) = \text{adj}(A) \text{adj}(B)$
 - ☒ 2. Adjoint of a diagonal matrix of order 3×3 is a diagonal matrix
 - ☒ 3. The product of upper triangular matrices is an upper triangular matrix
 - ☒ 4. if $\det(A) = 0$, then $\text{adj}(\det(A)) = 0$

Q.4 If $A = \begin{bmatrix} i & -i \\ -i & i \end{bmatrix}$ and $B = \begin{bmatrix} 1 & -1 \\ -1 & 1 \end{bmatrix}$, then A^8 equals:

Question ID : 723053804

- Ans
- ☒ 1. $64B$
 - ☒ 2. $16B$
 - ☒ 3. $32B$
 - ☒ 4. $128B$

Q.5 The orthocentre of the triangle ABC, whose angular points are A(1, 2), B(2, 3) and C(4, 3), is of the form:

Question ID : 723053816

- Ans
- ☒ 1. (2, 5)
 - ☒ 2. (1, 6)
 - ☒ 3. (2, 1)
 - ☒ 4. (1, 4)

Q.6 The equation of the locus of a point which moves such that its difference of distances from the points (3,0) and (-3,0) is 4 units, is given by:

Question ID : 723053810

- Ans
- ☒ 1. $\frac{x^2}{5} - \frac{y^2}{6} = 1$
 - ☒ 2. $\frac{x^2}{4} + \frac{y^2}{5} = 1$

✓ 3. $\frac{x^2}{4} - \frac{y^2}{5} = 1$

✗ 4. $\frac{x^2}{5} + \frac{y^2}{6} = 1$

Q.7 The equation of the straight line that passes through the point (3,4) and has intercepts on the axes equal in magnitude but opposite in sign is:

Question ID : 723053813

Ans ✗ 1. $x + y = 2$

✗ 2. $x + y = 1$

✓ 3. $x - y = -1$

✗ 4. $x - y = 1$

Q.8 The value of $\tan \theta \tan(60^\circ + \theta) \tan(60^\circ - \theta)$ is:

Question ID : 723053819

Ans ✓ 1. $\tan 3\theta$

✗ 2. $3 \tan \theta$

✗ 3. $\left(\frac{1}{4}\right) \cos 3\theta$

✗ 4. $\left(\frac{1}{4}\right) \sin 3\theta$

Q.9 If a system of equations $x + y = 3$, $(1+k)x + (2+k)y = 8$ and $x - (1+k)y + (2+k) = 0$ is consistent, then the values of k are:

Question ID : 723053806

Ans ✓ 1. $1, \frac{-5}{3}$

✗ 2. $0, 1$

✗ 3. $-1, \frac{1}{3}$

✗ 4. $\frac{2}{3}, -1$

Q.10 If (1,5,0), (1,3,6) and (-1,6) are the midpoints of the sides of a triangle, then the in-centre of the triangle is at coordinates:

Question ID : 723053809

Ans ✗ 1. (2, 4)

✗ 2. (3, 1)

✗ 3. (2, 3)

✓ 4. (1, 2)

Q.11 The equation of the straight line passing through the point of intersection of the lines $x + 5y + 7 = 0$, $3x + 2y - 5 = 0$ and parallel to the line $7x + 2y - 5 = 0$ is:

Question ID : 723053815

Ans ✗ 1. $2x + 7y + 20 = 0$

✗ 2. $2x - 7y + 17 = 0$

✓ 3. $7x + 2y - 17 = 0$

✗ 4. $7x + 2y - 20 = 0$

Q.12 All the four entries of the 2×2 matrix $A = \begin{bmatrix} a_{11} & a_{12} \\ a_{21} & a_{22} \end{bmatrix}$ are NON-zero, and one of its eigen values is zero. Which of the following statements is true?

Question ID : 723053803

- Ans
- ☒ 1. $a_{11}a_{22} + a_{12}a_{21} = 0$
 - ☒ 2. $a_{11}a_{22} - a_{12}a_{21} = 1$
 - ☒ 3. $a_{11}a_{22} - a_{12}a_{21} = -1$
 - ☒ 4. $a_{11}a_{22} - a_{12}a_{21} = 0$

Q.13 When m is a variable, then the equation of a family of lines making a constant intercept c on the y -axis is:

Question ID : 723053817

- Ans
- ☒ 1. $y = mx \pm c$
 - ☒ 2. $m(x + y) = c$
 - ☒ 3. $y = \left(\frac{x}{2}\right) - c$
 - ☒ 4. $x = my \pm c$

Q.14 Two vertices of a triangle are $(0,5)$ and $(6,3)$. When its centroid is $(1, -2)$, then the third vertex is:

Question ID : 723053808

- Ans
- ☒ 1. $(-3, 14)$
 - ☒ 2. $(3, -14)$
 - ☒ 3. $(3, 14)$
 - ☒ 4. $(-3, -14)$

Q.15 If $x = \sin^2\theta + \cos^4\theta$, then for all values of θ :

Question ID : 723053821

- Ans
- ☒ 1. $1 \leq x \leq 3$
 - ☒ 2. $0.75 \leq x \leq 1$
 - ☒ 3. $1 \leq x \leq 2x$
 - ☒ 4. $0.5 \leq x \leq 1.5$

Q.16 The distance between two parallel lines $5x - 12y + 2 = 0$ and $5x - 12y - 3 = 0$ is given by:

Question ID : 723053814

- Ans
- ☒ 1. $\frac{1}{13}$
 - ☒ 2. $\frac{5}{14}$
 - ☒ 3. $\frac{5}{13}$
 - ☒ 4. $\frac{1}{17}$

Q.17 If a system of equations $\lambda x + y + z = 1$, $x + \lambda y + z = 1$ and $x + y + \lambda z = 1$ is consistent, then λ can have value as:

Question ID : 723053807

- Ans
- ☒ 1. 2
 - ☒ 2. 1
 - ☒ 3. -1
 - ☒ 4. -2

Q.18 For what value of k , does the straight line $y = x + k$ touches the ellipse $\left(\frac{x}{4}\right)^2 + \left(\frac{y}{3}\right)^2 = 1$?

Question ID : 723053818

- Ans
- ☒ 1. 7
 - ☒ 2. ± 6
 - ☒ 3. ± 5
 - ☒ 4. 2

Q.19 For which value of k , the points $(k, 2 - 2k)$, $(-k + 1, 2k)$ and $(-4 - k, 6 - 2k)$ are collinear?

Question ID : 723053811

- Ans
- ☒ 1. 2
 - ☒ 2. -1
 - ☒ 3. 0.5
 - ☒ 4. 1

Q.20 The equation of the straight line that is equidistant from the lines $x = -3.5$ and $x = 7.5$ is:

Question ID : 723053812

- Ans
- ☒ 1. $x = -1$
 - ☒ 2. $x = -2$
 - ☒ 3. $x = 2$
 - ☒ 4. $x = 1$

Section : Subject Related

Q.1 If $\sin^{-1}(x) + \sin^{-1}(y) + \sin^{-1}(z) = \frac{2\pi}{3}$, then the value of $((x)^{100} + (y)^{100} + (z)^{100}) - \left(\frac{8}{(x)^{100} + (y)^{100} + (z)^{100}}\right)$ is:

Question ID : 723053831

- Ans
- ☒ 1. 2
 - ☒ 2. 0
 - ☒ 3. 3
 - ☒ 4. -1

Q.2 If $A = \tan^{-1}\left(\frac{1}{7}\right)$ and $B = \tan^{-1}\left(\frac{1}{3}\right)$, then:

Question ID : 723053828

- Ans
- ☒ 1. $\sin 4A = \cos 2B$
 - ☒ 2. $\sin 2B = \cos 2A$
 - ☒ 3. $\cos 2A = \sin 4B$
 - ☒ 4. $\sin 2A = \cos 2B$

Q.3 If $\sin^{-1}(x) + \sin^{-1}(-x) + \cos^{-1}(1 - x) = 0$, then x satisfies the equation:

Question ID : 723053830

- Ans
- ☒ 1. $2x^2 - 5x = 0$
 - ☒ 2. $2x^2 - x + 1 = 0$
 - ☒ 3. $2x^2 + x - 2 = 0$
 - ☒ 4. $2x^2 - 5x + 2 = 0$

Q.4 A tree is broken by wind, its upper part touching the ground at a point 16 m from the foot of the tree and making an angle of 45° with the ground. The entire length of the tree is:

Question ID : 723053827

- Ans
- ☒ 1. $16\sqrt{2}$ m
 - ☒ 2. $4(1 + \sqrt{2})$ m

✓ 3. $4^2(1 + \sqrt{2})$ m

✗ 4. $(4\sqrt{2} + 1)$ m

Q.5 When we use Mean Value theorem for $f(x) = x(x-1)(x-2)$, then the value of c between 0 and $\frac{1}{2}$ is:

Question ID : 723053837

Ans ✗ 1. 0.138

✗ 2. 1.764

✓ 3. 0.236

✗ 4. 0.317

Q.6 When $\tan^{-1}(x) = \cos^{-1}(x)$, then the value of $\sin(\cos^{-1}(x))$ is:

Question ID : 723053829

Ans ✓ 1. x^2

✗ 2. x^{-1}

✗ 3. $2x$

✗ 4. x^{-2}

Q.7 If $f(x) = \begin{cases} \frac{1}{x}[x(1+a\cos x) - b\sin x] & \text{if } x \neq 0 \\ 1 & \text{if } x = 0 \end{cases}$ is a continuous function, then the values of a and b , respectively, are:

Question ID : 723053833

Ans ✗ 1. $\frac{5}{2}, \frac{-3}{2}$

✗ 2. $\frac{-5}{2}, \frac{3}{2}$

✓ 3. $\frac{-5}{2}, \frac{-3}{2}$

✗ 4. $\frac{1}{3}, \frac{1}{5}$

Q.8 If the two sides of a triangle are the roots of the equation $4x^2 - (2\sqrt{6})x + 1 = 0$ and they include an angle is 60° , then third side of the triangle is:

Question ID : 723053825

Ans ✗ 1. $\frac{1}{2}$

✓ 2. $\frac{\sqrt{3}}{2}$

✗ 3. $\sqrt{3}$

✗ 4. $\frac{2}{\sqrt{3}}$

Q.9 Does $\lim_{x \rightarrow 0} \frac{\tan x - x}{x^2 \tan x}$ exist? If it does, then the value of this limit is:

Question ID : 723053832

Ans ✓ 1. $\frac{1}{3}$

✗ 2. $\frac{1}{2}$

✗ 3. 1

✗ 4. Such value does not exist

Q.10 The possible solution(s) of the equation $\tan x + \frac{1}{\cos x} = 2 \cos x$, lying in the interval $0 \leq x \leq 2\pi$, are:

Question ID : 723053822

Ans ✗ 1. 4

✓ 2. 2

✗ 3. 3

✗ 4. 1

Q.11 In a triangle ABC, if $a + b - 3c = 0$, then $\cos A + \cos B$ is equal to:

Question ID : 723053823

Ans ✗ 1. $3 \cos C$

✓ 2. $3(1 - \cos C)$

✗ 3. $3 \sin C$

✗ 4. $3 \cos (A - B)$

Q.12 The possible extreme point of a function $f(x, y) = x^2 + y^2 + \left(\frac{2}{x}\right) + \left(\frac{2}{y}\right)$ is:

Question ID : 723053841

Ans ✗ 1. $\left(\frac{1}{3}\right), \left(\frac{1}{3}\right)$

✓ 2. (1, 1)

✗ 3. (0, 0)

✗ 4. (-1, -1)

Q.13 The function $f(x) = (x^2 - 1)|x^2 - 3x + 2| + \cos|x|$ is not differentiable at the point:

Question ID : 723053834

Ans ✓ 1. $x = 2$

✗ 2. $x = -1$

✗ 3. $x = 0$

✗ 4. $x = 1$

Q.14 The slope of the circle $x^2 + y^2 = 25$ at the point (3, -4) is:

Question ID : 723053838

Ans ✗ 1. 0.5

✗ 2. 1

✗ 3. 0.25

✓ 4. 0.75

Q.15 When we use Rolle's theorem for $f(x) = x^{2m-1}(a-x)^{2n}$, then the value of x between 0 and a is:

Question ID : 723053836

Ans ✗ 1. $\frac{(m-1)a}{m+n-1}$

✗ 2. $\frac{(2m+1)a}{2m-2n+1}$

✓ 3. $\frac{(2m-1)a}{2m+2n-1}$

✗ 4. $\frac{(m+1)a}{m+n+1}$

Q.16 If the median of the triangle ABC through A is perpendicular to AB, then the value of $\tan A + 2 \tan B$ is:

Question ID : 723053824

- Ans
- ✗ 1. $\tan C$
 - ✗ 2. $\cos C$
 - ✗ 3. $\sin C$
 - ✓ 4. 0

Q.17 The first derivative of $y = \frac{(x-1)(x^2-2x)}{x^4}$, with respect of x , is:

Question ID : 723053835

- Ans
- ✗ 1. $2x^{-2} + 5x^{-3} - 6x^{-4}$
 - ✓ 2. $-x^{-2} + 6x^{-3} - 6x^{-4}$
 - ✗ 3. $x^{-2} - 6x^{-3} + 6x^{-4}$
 - ✗ 4. $x^{-2} + 6x^{-3} - 2x^{-4}$

Q.18 Let f be a continuous function on $[1, 3]$. If f takes only rational values for all x and $f(2) = 10$, then $f(1.5)$ is equal to:

Question ID : 723053840

- Ans
- ✗ 1. 8
 - ✗ 2. $\left(\frac{1}{3}\right)[f(1) + f(3)]$
 - ✓ 3. 10
 - ✗ 4. 20

Q.19 An aeroplane flying at a height of 3,000 m above the ground, passes vertically above another plane at an instant, when the angles of elevation of the two planes from the same point on the ground are 60° and 45° respectively. The height of the lower plane from the ground is:

Question ID : 723053826

- Ans
- ✗ 1. $100\sqrt{30}$ m
 - ✗ 2. $\frac{100}{\sqrt{30}}$ m
 - ✗ 3. $300\sqrt{10}$ m
 - ✓ 4. $100\sqrt{300}$ m

Q.20 The distance of a point on the curve $y = x(x^2 + 3x + 2)$ which is nearest to the line $y = 2x - 1$ is:

Question ID : 723053839

- Ans
- ✗ 1. $\frac{4}{\sqrt{5}}$
 - ✗ 2. $\frac{2}{\sqrt{5}}$
 - ✓ 3. $\frac{1}{\sqrt{5}}$
 - ✗ 4. $\frac{3}{\sqrt{5}}$

Q.1 The possible number of solutions of the equation $k^{f(x)} + g(x) = 0$, where $k > 0, g(x) \neq 0$ and $g(x)$ has minimum value 0.5, is/are:

Question ID : 723053843

- Ans
- ☒ 1. Zero
 - ☐ 2. Two
 - ☐ 3. One
 - ☐ 4. Infinitely many

Q.2 The unit vector in the direction of the vector $2\hat{i} - \hat{j} - 2\hat{k}$ is:

Question ID : 723053859

- Ans
- ☒ 1. $\left(\frac{1}{3}\right)(2\hat{i} - \hat{j} - 2\hat{k})$
 - ☐ 2. $3(2\hat{i} + \hat{j} - 2\hat{k})$
 - ☐ 3. $9(2\hat{i} + \hat{j} - 2\hat{k})$
 - ☐ 4. $\left(\frac{1}{9}\right)(2\hat{i} + \hat{j} - 2\hat{k})$

Q.3 The solution of the differential equation $\frac{dy}{dx} = \frac{(ax+b)}{(cx+d)}$ represents a parabola if:

Question ID : 723053854

- Ans
- ☐ 1. Both a and c are 1
 - ☐ 2. Both a and c are 0
 - ☒ 3. c is zero and a is non-zero
 - ☐ 4. a = 1 and b = 2

Q.4 The particular solution of the differential equation $\frac{dy}{dx} = e^{(3x+4y)}$, $y(0) = 0$ is:

Question ID : 723053853

- Ans
- ☐ 1. $4e^{3x} + 3e^{4y} = 7$
 - ☐ 2. $4e^{3x} - e^{-4y} = 3$
 - ☐ 3. $e^{3x} + 3e^{-4y} = 4$
 - ☒ 4. $4e^{3x} + 3e^{-4y} = 7$

Q.5 The general solution of the equation $\frac{dy}{dx} = \left(\frac{y}{x}\right) + \phi\left(\frac{x}{y}\right)$ is given by $y \ln[Cx] = x$. Then $\phi\left(\frac{x}{y}\right)$ is:

Question ID : 723053856

- Ans
- ☐ 1. $\left(-\frac{x}{y}\right)^2$
 - ☐ 2. $\left(\frac{y}{x}\right)^2$
 - ☐ 3. $\left(\frac{x}{y}\right)^2$
 - ☒ 4. $\left(-\frac{y}{x}\right)^2$

Q.6 Let $f(x) = \int_0^{x^2} \sin^{-1} \sqrt{u} \, du$ and $g(x) = \int_0^{\cos^2 x} \cos^{-1} \sqrt{u} \, du$. Then the value of $f(x) + g(x)$ is equal to:

Question ID : 723053848

- Ans
- ☐ 1. $\frac{\pi}{2}$

- ✗ 2. $\frac{\pi}{3}$
- ✓ 3. $\frac{\pi}{4}$
- ✗ 4. $\frac{2\pi}{3}$

Q.7 Let \vec{a} , \vec{b} and \vec{c} be any three vectors such that $|\vec{a}| = 1$, $|\vec{b}| = 4$, $|\vec{c}| = 8$ and $\vec{a} \cdot (\vec{b} + \vec{c}) = \vec{b} \cdot (\vec{c} + \vec{a}) = \vec{c} \cdot (\vec{a} + \vec{b}) = 0$, then $|\vec{a} + \vec{b} + \vec{c}|$ is equal to:

Question ID : 723053858

- Ans ✓ 1. 9
- ✗ 2. 12
- ✗ 3. 7
- ✗ 4. 8

Q.8 If $f(x) = \frac{\sqrt{\tan x}}{(\sin x \cos x)}$, and $F(x)$ is its antiderivative such that $F\left(\frac{\pi}{4}\right) = 6$, then $F(x)$ is of the form:

Question ID : 723053845

- Ans ✗ 1. $2\sqrt{\tan x} + 3$
- ✗ 2. $2\sqrt{\tan x} + 1$
- ✗ 3. $2\sqrt{\tan x} + 2$
- ✓ 4. $2\sqrt{\tan x} + 4$

Q.9 The general solution of the differential equation $\frac{dy}{dx} + \sin\left(\frac{x+y}{2}\right) = \sin\left(\frac{x-y}{2}\right)$ is:

Question ID : 723053851

- Ans ✗ 1. $\ln\left|\tan\left(\frac{y}{2}\right)\right| = C + 2\sin\left(\frac{x}{2}\right)$
- ✗ 2. $\ln\left|\tan\left(\frac{y}{2}\right)\right| = C - 2\sin\left(\frac{x}{4}\right)$
- ✗ 3. $\ln\left|\tan\left(\frac{y}{2}\right)\right| = C - 2\sin(x)$
- ✓ 4. $\ln\left|\tan\left(\frac{y}{4}\right)\right| = C - 2\sin\left(\frac{x}{2}\right)$

Q.10 The solution of the differential equation $2y \sin x \left(\frac{dy}{dx}\right) = \sin 2x - y^2 \cos x$ with $y\left(\frac{\pi}{2}\right) = 1$ is:

Question ID : 723053855

- Ans ✗ 1. $y = \sin^2 x$
- ✓ 2. $y^2 = \sin x$
- ✗ 3. $x^2 = \sin y$
- ✗ 4. $y^2 = 1 + \cos x$

Q.11 The value of the integral $\int \frac{\cos 4x - 1}{\cot x - \tan x} dx$ is:

Question ID : 723053846

- Ans ✗ 1. $\frac{1}{2} \ln|\cos(2x)| + C$

✓ 2. $\frac{1}{2} \ln |\cos(2x)| - \frac{1}{4} \cos^2(2x) + C$

✗ 3. $\frac{1}{2} \cos(4x) + C$

✗ 4. $\frac{1}{4} \cos(4x) + C$

Q.12 The solution of the linear differential equation $\frac{dy}{dx} = 1 \left(\frac{2x}{y^2} \right)$ is given by:

Question ID : 723053852

Ans

✗ 1. $x = Ce^{2y} + \left(\frac{1}{4}\right)[y^2 + 2y + 1]$

✗ 2. $y = Ce^{-2x} + \left(\frac{1}{4}\right)[x^2 + 2x + 1]$

✗ 3. $x = Ce^{2y} + \left(\frac{1}{2}\right)[y^2 + y + 1]$

✓ 4. $x = Ce^{2y} + \left(\frac{1}{4}\right)[2y^2 + 2y + 1]$

Q.13 The degree of the differential equation $\left(\frac{d^2y}{dx^2}\right)^{\frac{2}{3}} - \left(\frac{dy}{dx}\right)^{\frac{1}{2}} - 4 = 0$ is:

Question ID : 723053850

Ans

✓ 1. 6

✗ 2. 2

✗ 3. 3

✗ 4. 4

Q.14 The coordinates of the point on the parabola $y^2 = 8x$, which is at a minimum distance from the circle $[x - 0]^2 + [y - (-6)]^2 = 4$, are given by:

Question ID : 723053842

Ans

✓ 1. (2, -4)

✗ 2. (1, -2)

✗ 3. (-1, 2)

✗ 4. (-2, 4)

Q.15 If $f(x) = 2x + 3^x \log_e(3)$, and $F(x)$ is its antiderivative such that $F(2) = 7$, then the value of x for which the curve $F(x)$ cuts the abscissa axis is:

Question ID : 723053844

Ans

✓ 1. $x = 1$

✗ 2. $x = 2$

✗ 3. $x = 3$

✗ 4. $x = 0$

Q.16 The value of the integral $\int \frac{\sin x}{\sqrt{1+\cos x}} dx$ is:

Question ID : 723053847

Ans

✗ 1. $\sqrt{2} \cos\left(\frac{x}{2}\right) + C$

✓ 2. $-\sqrt{8} \cos\left(\frac{x}{2}\right) + C$

✗ 3. $\sqrt{8} \cos\left(\frac{x}{2}\right) + C$

✗ 4. $-\sqrt{2} \cos\left(\frac{x}{2}\right) + C$

Q.17 The value of the integral $\int_0^{\infty} \frac{x \ln(x)}{(1+x^2)^2} dx$ is:

Question ID : 723053849

Ans ✗ 1. 13

✗ 2. $2 \ln(5)$

✗ 3. $5 \ln(2)$

✓ 4. 0

Q.18 If $(\vec{a} \times \vec{b}) \times \vec{c} = \vec{a} \times (\vec{b} \times \vec{c})$, where, $\vec{a} = 2\hat{i} + \hat{j} + \lambda\hat{k}$, $\vec{b} = \hat{i} - \hat{j}$, $\vec{c} = 4\hat{i} + \mu\hat{j} + 2\hat{k}$, then the values of λ and μ are respectively:

Question ID : 723053857

Ans ✗ 1. 1, 4

✗ 2. 2, 3

✗ 3. 4, 2

✓ 4. 1, 2

Q.19 The distance between a point whose position vector is $5\hat{i} + \hat{j} + 3\hat{k}$ and the line $\vec{r} = (3\hat{i} + 7\hat{j} + \hat{k}) + t(\hat{j} + \hat{k})$ is given by:

Question ID : 723053860

Ans ✗ 1. 3

✓ 2. 6

✗ 3. 5

✗ 4. 4

Q.20 Let \vec{a} be any non-zero vector, whereas \vec{b} and \vec{c} be unit vectors. Then the value of $\{[(\vec{a} + \vec{b}) \times (\vec{a} + \vec{c})] \times (\vec{b} \times \vec{c})\} \cdot (\vec{b} + \vec{c})$ is:

Question ID : 723053861

Ans ✓ 1. 0

✗ 2. $|\vec{a}|^2$

✗ 3. $2|\vec{a}|^2$

✗ 4. $3|\vec{a}|^2$

Section : Subject Related

Q.1 If A and B are mutually exclusive events such that $P(A) = 0.29$ and $P(B) = 0.43$, then $P(A \cap B)$ is equal to:

Question ID : 723053880

Ans ✓ 1. 0.29

✗ 2. 0.85

✗ 3. 0.37

✗ 4. 0.50

Q.2 The length of the shortest distance between the lines $\frac{x-1}{2} = \frac{y-2}{3} = \frac{z-3}{4}$ and $\frac{x-2}{3} = \frac{y-4}{4} = \frac{z-5}{5}$ is:

Question ID : 723053867

Ans ✗ 1. $13\sqrt{66}$

✓ 2. $\frac{1}{\sqrt{6}}$

✗ 3. $3\sqrt{30}$

✗ 4. $\frac{2}{3\sqrt{6}}$

Q.3 The angle θ between the line $\frac{x+1}{2} = \frac{y-0}{3} = \frac{z-3}{6}$ and the plane $3x + y + z = 7$ is:

Question ID : 723053868

Ans

✗ 1. $\sin^{-1}\left(\frac{5}{7\sqrt{11}}\right)$

✓ 2. $\sin^{-1}\left(\frac{15}{7\sqrt{11}}\right)$

✗ 3. $\cos^{-1}\left(\frac{2}{\sqrt{13}}\right)$

✗ 4. $\cos^{-1}\left(\frac{5}{7\sqrt{11}}\right)$

Q.4 The arithmetic mean of the data $(x, f) : (8, 5), (10, 8), (15, 8), (20, 4)$ is:

Question ID : 723053872

Ans

✗ 1. 25

✗ 2. 12.4

✓ 3. 12.8

✗ 4. 12.5

Q.5 Which of the following triplets gives the direction cosine of a straight line?

Question ID : 723053862

Ans

✗ 1. 1, 1, 1

✗ 2. 1, 1, -1

✗ 3. 1, -1, 1

✓ 4. $\frac{1}{\sqrt{3}}, \frac{1}{\sqrt{3}}, \frac{1}{\sqrt{3}}$

Q.6 If at least one child in a family with 2 children is a boy, then the probability that both children are boys is:

Question ID : 723053881

Ans

✗ 1. $\frac{2}{3}$

✗ 2. $\frac{3}{4}$

✓ 3. $\frac{1}{3}$

✗ 4. $\frac{1}{4}$

Q.7 The equation of the sphere on the join of $(2, -3, 1)$ and $(1, -2, -1)$ as diameter is:

Question ID : 723053871

Ans

✗ 1. $x^2 + y^2 + z^2 + 3x - 5y + 7 = 0$

✓ 2. $x^2 + y^2 + z^2 - 3x + 5y + 7 = 0$

✗ 3. $x^2 + y^2 + z^2 + 3x - 5y - 7 = 0$

✗ 4. $x^2 + y^2 + z^2 + 3x + 5y + 7 = 0$

Q.8 If a straight line makes angles α, β, γ with the axes of coordinates, then $\cos 2\alpha + \cos 2\beta + \cos 2\gamma$ is equal to:

Question ID : 723053863

Ans ✗ 1. 1

✗ 2. -2

✓ 3. -1

✗ 4. 2

Q.9 The point of contact of the plane $2x - 2y + z + 12 = 0$ touches the sphere $x^2 + y^2 + z^2 - 2x - 4y + 2z - 3 = 0$ is:

Question ID : 723053869

Ans ✗ 1. (1,4,2)

✓ 2. (-1,4, -2)

✗ 3. (2,1,4)

✗ 4. (4,1,2)

Q.10 The mode of the numbers 25, 15, 23, 40, 27, 25, 23, 25, 20 is:

Question ID : 723053875

Ans ✗ 1. 24.8

✓ 2. 25

✗ 3. 13

✗ 4. 24.7

Q.11 The mean and standard deviation of 20 numbers are found to be 10 and 3 respectively. At the time of checking, it is found that one value was wrongly taken as 8, which should have been 12. If the wrong value is replaced by the correct one, then the correct mean and standard deviation, respectively, are:

Question ID : 723053877

Ans ✗ 1. 10.11, 1.997

✗ 2. 10.01, 1.097

✗ 3. 10.01, 1.917

✓ 4. 10.2, 1.99

Q.12 When the mode is ill-defined, then the Empirical mode formula is of the form:

Question ID : 723053873

Ans ✗ 1. Mean - Mode = 3[Median - Mean]

✗ 2. Mean - Mode = 2[Mean - Median]

✓ 3. 3 Median - Mode = 2 Mean

✗ 4. Mean - Median = 3[Mean - Mode]

Q.13 The mean deviation about the mean and the standard deviation of the set of numbers 3, 5, 6, 7, 10, 12, 15, 18, respectively, are:

Question ID : 723053879

Ans ✗ 1. 4.1, 4.5

✓ 2. 4.25, 4.875

✗ 3. 4.15, 4.825

✗ 4. 3.75, 2.575

Q.14 The straight lines are coplanar if:

Question ID : 723053866

Ans ☒ 1.

They are concurrent and a line is perpendicular to each of them

☒ 2. A line is perpendicular to each of them

☒ 3. They are concurrent

☒ 4. A line is parallel to each other

Q.15 The mean and variance of a group of 100 observations are 6.5 and 3 respectively. 55 of these observations have the mean 6.6 and standard deviation 1.5. Then the mean and the standard deviation of the remaining 45 observations, respectively, are:

Question ID : 723053878

Ans ☒ 1. 8.36, 1.91

☒ 2. 6.83, 1.78

☒ 3. 6.26, 1.89

☒ 4. 6.38, 1.97

Q.16 The distance of the point of intersection of the line $\frac{x-2}{3} = \frac{y+1}{4} = \frac{z-2}{12}$ and the plane $x - y + z = 5$, from the point $(-1, -5, -10)$, is:

Question ID : 723053864

Ans ☒ 1. 13

☒ 2. 9

☒ 3. 2

☒ 4. 10

Q.17 When the spheres $x^2 + y^2 + z^2 = 25$ and $x^2 + y^2 + z^2 - 18x - 24y - 40z + 225 = 0$ touch externally, then the point of contact of the spheres is:

Question ID : 723053870

Ans ☒ 1. $(\frac{2}{5}, \frac{3}{5}, \frac{-1}{5})$

☒ 2. $(\frac{3}{7}, \frac{5}{7}, \frac{-2}{7})$

☒ 3. $(9, 12, 20)$

☒ 4. $(\frac{9}{5}, \frac{12}{5}, \frac{20}{5})$

Q.18 The relation between mean deviation (M.D.) and standard deviation (S.D.) is:

Question ID : 723053876

Ans ☒ 1. 5 M.D. = 4 S.D.

☒ 2. 4 M.D. = 3 S.D.

☒ 3. 4 M.D. = 5 S.D.

☒ 4. 3 M.D. = 4 S.D.

Q.19 The median of the numbers 20, 18, 22, 27, 25, 12, 15 is:

Question ID : 723053874

Ans ☒ 1. 20

☒ 2. 22

☒ 3. 19.8

☒ 4. 19.9

Q.20 The co-ordinates of the point that divides the line joining the points P(2, 3, 1) and Q(5, 0, 4) in the ratio 1 : 2 are:

Ans ☒ 1. (4, 1, 3)

☒ 2. (3, 2, 2)

☒ 3. (3, 1, 1)

☒ 4. $\left(\frac{7}{3}, 1, \frac{5}{3}\right)$

Question ID : 723053865

Section : Subject Related

Q.1 The probability density function $f(x)$ of a continuous random variable X is given by $f(x) = \begin{cases} k(x)^{-3} & \text{if } k \leq x \leq 10 \\ 0 & \text{otherwise} \end{cases}$. Then the value of ' k ' is:

Question ID : 723053884

Ans ☒ 1. 40

☒ 2. 200

☒ 3. $\frac{3}{200}$

☒ 4. $\frac{200}{3}$

Q.2 Suppose U and W are distinct 4-dimensional subspaces of a vector space V of dimension 6. The possible dimension of $U \cap W$ is:

Question ID : 723053887

Ans ☒ 1. 4 or 6

☒ 2. 5 or 6

☒ 3. 2 or 3

☒ 4. 1 or 4

Q.3 If the mean of a Poisson distribution is 0.5, then the ratio of $P(x = 3)$ to $P(x = 2)$ is:

Question ID : 723053885

Ans ☒ 1. 1 : 8

☒ 2. 1 : 4

☒ 3. 1 : 6

☒ 4. 1 : 2

Q.4 If the Laplace transform of a function $f(t)$ is $\frac{1}{s(s+a)}$, then $f(t)$ is equal to:

Question ID : 723053901

Ans ☒ 1. $\frac{1}{a}(1 - e^{-at})$

☒ 2. $(1 - e^{-at})$

☒ 3. ae^{-at}

☒ 4. $\frac{1}{a}e^{-at}$

Q.5 The function $f(x, y) = x^2 + y^2 - 63(x + y) + 12xy$ attains minimum at the point:

Question ID : 723053898

Ans ☒ 1. $(-1, 5)$

☒ 2. $(3, 3)$

☒ 3. $(-7, -7)$

✗ 4. $(5, -1)$

Q.6 If $F(s)$ is the Fourier transform of a function $f(x)$, then the Fourier transform of $f(2x)$ is given by:

Question ID : 723053900

Ans ✗ 1. $e^{2is}F(s)$

✗ 2. $F(s-2)$

✗ 3. $\frac{1}{2}F\left(\frac{2}{s}\right)$

✓ 4. $\frac{1}{2}F\left(\frac{s}{2}\right)$

Q.7 The eigen vectors corresponding to distinct eigen values of a real symmetric matrix are:

Question ID : 723053888

Ans ✗ 1. Invertible

✗ 2. Distinct

✗ 3. Symmetry

✓ 4. Orthogonal

Q.8 Let T be linear transformation of \mathbb{R}^3 into \mathbb{R}^3 defined by $T(x, y, z) = (2x + y - z, 3x - 2y + 4z)$ for all $(x, y, z) \in \mathbb{R}^3$. Then the matrix of T relative to the bases $\beta = \{e_1 = (1, 1, 1), e_2 = (1, 1, 0), e_3 = (1, 0, 0)\}$ and $\delta = \{e_1 = (1, 3), e_2 = (1, 4)\}$ is:

Question ID : 723053893

Ans ✗ 1. $\begin{bmatrix} 3 & -11 & 5 \\ -1 & 8 & 3 \end{bmatrix}$

✗ 2. $\begin{bmatrix} 3 & 11 & -5 \\ 1 & -8 & 3 \end{bmatrix}$

✓ 3. $\begin{bmatrix} 3 & 11 & 5 \\ -1 & -8 & -3 \end{bmatrix}$

✗ 4. $\begin{bmatrix} -3 & 11 & 5 \\ 1 & 8 & 3 \end{bmatrix}$

Q.9 If $f(z) = (x^2 + axy + by^2) + i(cx^2 + dxy + y^2)$ is an analytic function of z , then the values of a, b, c and d are:

Question ID : 723053899

Ans ✓ 1. $a = 2, b = -1, c = -1, d = 2$

✗ 2. $a = 2, b = 1, c = -1, d = -2$

✗ 3. $a = -2, b = 1, c = -1, d = 2$

✗ 4. $a = 2, b = -1, c = -1, d = 4$

Q.10 If the probability density function of a continuous random variable X is defined by $f(x) = kx(2-x), 0 < x < 2$, then the value of ' k ' is:

Question ID : 723053886

Ans ✗ 1. $\frac{3}{8}$

✗ 2. $\frac{1}{4}$

✓ 3. $\frac{3}{4}$

✗ 4. $\frac{1}{2}$

Q.11

Suppose $M = \begin{pmatrix} A_1 & B \\ 0 & A_2 \end{pmatrix}$, where A_1 and A_2 are square matrices. The characteristic polynomial of M is _____ to/of the characteristic polynomials of A_1 and A_2 .

Question ID : 723053891

- Ans
- ☒ 1. equal
 - ☒ 2. The quotient
 - ☒ 3. The product
 - ☒ 4. The sum

Q.12 The norm of $v = (3, 4) \in \mathbb{R}^2$, with respect to the usual inner product, is given by:

Question ID : 723053889

- Ans
- ☒ 1. 9
 - ☒ 2. 16
 - ☒ 3. 5
 - ☒ 4. 25

Q.13 Let $W = \{(a, b, 0) : a, b \in \mathbb{R}\}$ be a subset of \mathbb{R}^3 . Then which of the following is true?

Question ID : 723053890

- Ans
- ☒ 1. W is a subspace of \mathbb{R}^3

☒ 2.

W is not closed under vector addition and multiplication

☒ 3. W is not a subspace of \mathbb{R}^3

☒ 4. $W = \emptyset$

Q.14 A box contains 20 electric bulbs, out of which 4 are defective. Two bulbs are chosen at random from this box. The probability that at least one of these is defective is:

Question ID : 723053883

- Ans
- ☒ 1. $\frac{12}{19}$
 - ☒ 2. $\frac{4}{19}$
 - ☒ 3. $\frac{21}{95}$
 - ☒ 4. $\frac{7}{19}$

Q.15 In a plane triangle ABC, the maximum value of $\cos A \cos B \cos C$ is:

Question ID : 723053897

- Ans
- ☒ 1. $\frac{3}{4}$
 - ☒ 2. $\frac{1}{2}$
 - ☒ 3. $\frac{1}{4}$
 - ☒ 4. $\frac{1}{8}$

Q.16 Let f be a function such that $f(x) = f(1-x)$, for all $x \in \mathbb{R}$. If f is differentiable everywhere, then $f'(0)$ is equal to:

Question ID : 723053895

- Ans
- ☒ 1. $f(1)$

✓ 2. $-f'(1)$

✗ 3. $f(0)$

✗ 4. $-f(0)$

Q.17 The radius of convergence of the series $\sum_{n=1}^{\infty} \frac{(x+2)^{n-1}}{(n+1)^2 4^n}$ is:

Question ID : 723053896

Ans ✓ 1. 4

✗ 2. 2

✗ 3. 1

✗ 4. -2

Q.18 Identify which one of the following matrices is similar to a diagonal matrix.

Question ID : 723053894

✗ 1. $\begin{bmatrix} 2 & 3 & 4 \\ 0 & 2 & -1 \\ 0 & 0 & 1 \end{bmatrix}$

✓ 2. $\begin{bmatrix} 3 & 1 & 1 \\ 2 & 4 & 2 \\ 1 & 1 & 3 \end{bmatrix}$

✗ 3. $\begin{bmatrix} 2 & 1 & 0 \\ 0 & 2 & 1 \\ 0 & 0 & 2 \end{bmatrix}$

✗ 4. $\begin{bmatrix} 3 & 10 & 5 \\ -2 & -3 & -4 \\ 3 & 5 & 7 \end{bmatrix}$

Q.19 Which of the following vectors form a basis for the vector space \mathbb{R}^3 ?

Question ID : 723053892

✗ 1. $(1, 2, 3), (1, 0, -1), (3, -1, 4)$ and $(2, 1, 1)$

✓ 2. $(2, 4, -3), (0, 1, 1)$ and $(0, 1, -1)$

✗ 3. $(1, 3, -4), (1, 4, -3)$ and $(2, 3, -11)$

✗ 4. $(1, 2, -1)$ and $(1, -1, 5)$

Q.20 A bag contains 4 white, 5 red and 6 blue balls. Three balls are drawn at random from the bag. The probability that all of them are red is:

Question ID : 723053882

Ans ✗ 1. $\frac{3}{22}$

✗ 2. $\frac{1}{22}$

✗ 3. $\frac{2}{77}$

✓ 4. $\frac{2}{91}$

Q.1 When a learner performs a skill according to the instruction rather than the observation, he is known to be at the _____ level of psychomotor domain.

Question ID : 723053904

- Ans
- ☒ 1. 'Manipulates'
 - ☒ 2. 'Articulates'
 - ☒ 3. 'Imitates'
 - ☒ 4. 'Naturalises'

Q.2 Which of these factors does NOT affect the emotionality of a person?

Question ID : 723053902

- Ans
- ☒ 1.
Child A is too much excited at the thought of an ice cream
 - ☒ 2.
Child B is exhausted after travelling for 4 hours in the car
 - ☒ 3.
Child D is suffering from disease due to malnutrition
 - ☒ 4.
Child C is happily sleeping at night undisturbed for 8 hours

Q.3 दिये गए विवरण से सीखने की शैली की पहचान करें:

Question ID : 723053905

सोमू जो कुछ भी सीखता है, उसका व्यावहारिक अनुभव करना उसे पसंद है। वह समित ज्ञान की भौतिक निष्कटता का अनुभव करने के लिए अध्ययन यात्राओं का आनंद लेता है। वह जो कुछ भी सीखता है, उससे संबंधित टिप्पणियों स्वयं लिखता है।

- Ans
- ☒ 1. श्रवण संबंधी सीखने की शैली
 - ☒ 2. स्पर्शनीय सीखने की शैली
 - ☒ 3. दृश्य/अशाब्दिक (सांकेतिक) सीखने की शैली
 - ☒ 4. दृश्य/मौखिक (शाब्दिक) सीखने की शैली

Q.4 निम्नलिखित में से क्या समाचार पत्र पढ़ने से संबंधित अच्छा पक्ष नहीं है?

Question ID : 723053911

- Ans
- ☒ 1.
वास्तविक स्थिति की अतिरंजित या कम कर के आँके गए समाचार
 - ☒ 2. वृहत् शब्दावली
 - ☒ 3.
समाज में असामाजिक तत्वों के बारे में जानकारी
 - ☒ 4.
वर्तमान घटनाओं पर नवीनतम अद्यतन (अपडेट)

Q.5 Which of these is NOT a 2D art, method or technique to use while teaching a subject?

Question ID : 723053912

- Ans
- ☒ 1. Collage making
 - ☒ 2. Rangoli
 - ☒ 3. Installation
 - ☒ 4. Mandna

Q.6 _____ is/are mandated to provide academic and technical resource support to adult and continuing education through development and production of material and training modules. In addition to this, it/they would be required to conduct motivational and environmental building, action research and evaluation and monitoring.

Question ID : 723053903

- Ans
- ☒ 1. Rashtriya Madhyamik Shiksha Abhiyan

✓ 2. The State Resource Centre(s)

✗ 3. Sarva Shiksha Abhiyan

✗ 4. Jan Shikshan Sansthan

Q.7 _____ is a developmental disability significantly affecting verbal and non-verbal communication and social interaction, generally evident before age three and characterised by engaging in repetitive activities and stereotyped movements.

Question ID : 723053921

Ans ✓ 1. Autism

✗ 2. Dyslexia

✗ 3. Dysgraphia

✗ 4. ADHD

Q.8 Identify the correct statement on role play from the given options?

Question ID : 723053913

Ans ✗ 1. Introverts enjoy Role plays

✗ 2.

All kinds of learners are proactive to take up role plays

✗ 3. Low level of learner involvement

✓ 4.

Effective while addressing issues in the affective domain

Q.9 What should be the objective of teaching science at higher secondary school level?

Question ID : 723053907

Ans ✗ 1.

Develop the quantitative sense to solve the problems

✗ 2. To develop the observation skills

✓ 3.

To develop economic efficiency and capacity to earn a livelihood

✗ 4.

To get the knowledge about the society and natural environment

Q.10 The ability to perceive existing gender differences and issues and to incorporate these into strategies and actions is known as:

Question ID : 723053908

Ans ✗ 1. gender equity

✗ 2. gender parity

✓ 3. gender sensitivity

✗ 4. gender equality

Q.11 Which of these is NOT a blog tool?

Question ID : 723053914

Ans ✗ 1. WordPress

✓ 2. Trackback

✗ 3. Edublog

✗ 4. Blogger

Q.12 In a particular Mathematics class, a student can draw geometrical figures and graphs. Which stage of cognitive domain is the student exhibiting?

Question ID : 723053910

Ans ✗ 1. Understanding

- ✓ 2. Skill
- ✗ 3. Knowledge
- ✗ 4. Application

Q.13 Which of these is NOT a correct statement on the guiding principles of constructivism?

Question ID : 723053918

Ans ✗ 1.

Learning requires understanding wholes as well as parts and parts must be understood in the context of wholes

✗ 2.

The purpose of learning is for an individual to construct his or her own meaning, not just to memorise the "right" answers

✗ 3.

Learning must start with the issues around which students are actively trying to construct meaning

✓ 4.

The learning process focuses on isolated facts, not on primary concepts

Q.14 Which of these skills is a receptive skill?

Question ID : 723053906

Ans ✓ 1. Listening

✗ 2. Speaking

✗ 3. Writing

✗ 4. Language

Q.15 Which of these is NOT a correct statement of the CAI?

Question ID : 723053915

Ans ✓ 1.

CAI can give a human touch better than traditional teaching

✗ 2. It facilitates reteaching and reinforcing

✗ 3.

It can help teachers to improve their role in education process.

✗ 4. It can create simulations in the learner

Q.16 Which of these is NOT an assessment method?

Question ID : 723053917

Ans ✗ 1. Homework exercises

✓ 2. Students watching an audiovisual

✗ 3. Simulations

✗ 4. Presentations

Q.17 When knowledge is acquired through religious texts, it is known as _____.

Question ID : 723053916

Ans ✗ 1. testimony

✓ 2. revelation

✗ 3. reason

✗ 4. authority

Q.18 Which of these is NOT a correct statement on including inclusive education in India?

Question ID : 723053920

Ans ✓ 1.

Children with special needs cannot be made a part of regular school.

✗ 2.

It develops the tolerance and appreciation of normal children for differently abled students.

✗ 3.

It is an opportunity to form friendships with other children.

✗ 4.

Giving all the normal and differently abled children equal opportunities to learn and get equal treatment as others.

Q.19 Which of these is NOT a part of social science?

Question ID : 723053909

Ans

✓

1. Biology

✗

2. Anthropology

✗

3. Statistics

✗

4. Sociology

Q.20 The assessment that expands the findings of an assessment with analysis of abilities and potentials with a further dimension is known as:

Question ID : 723053919

Ans

✗

1. summative assessment

✓

2. prognostic assessment

✗

3. diagnostic assessment

✗

4. formative assessment