भारतीय विमानपत्तन प्राधिकरण
(मिनी रत्न - श्रेणी - 1 सार्वजनिक क्षेत्र का उद्यम)

AIRPORTS AUTHORITY OF INDIA
(Schedule – 'A' Mini Ratna – Category – 1 Public Sector Enterprise)

Section : **General Knowledge**

Q.1 **A bill CANNOT become a law unless the _____ finally approves it.**

Ans
- ✗ A. Chief Justice of India
- ✗ B. Prime Minster
- ✗ C. Deputy Prime Minister
- ✓ D. President

Question ID : **9767557726**
Status : **Answered**
Chosen Option : **1**

Q.2 **Which of the following is the correct short form of CPI?**

Ans
- ✗ A. Consumer Price Interest
- ✓ B. Consumer Price Index
- ✗ C. Customer Price Index
- ✗ D. Customary Price Index

Question ID : **9767557718**
Status : **Answered**
Chosen Option : **2**

Q.3 **What is the healthy pH range for a human body?**

Ans
- ✓ A. Between 7 to 7.8
- ✗ B. Between 6 to 6.8
- ✗ C. Between 9 to 9.8
- ✗ D. Between 8 to 8.8

Question ID : **9767557720**
Status : **Answered**
Chosen Option : **1**

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Q.4 Who is a 'malakar'?

Ans
- ✗ A. Author
- ✗ B. Dancer
- ✓ C. Garland maker
- ✗ D. Musician

Question ID : **9767557717**
Status : **Answered**
Chosen Option : **3**

Q.5 Where was India's first atomic power station established?

Ans
- ✓ A. Tarapur, Maharashtra
- ✗ B. Sitapur, Uttar Pradesh
- ✗ C. Rampur, Uttar Pradesh
- ✗ D. Dharampur, Himachal Pradesh

Question ID : **9767557722**
Status : **Answered**
Chosen Option : **1**

Q.6 Hagiography is the life story of a _____.

Ans
- ✓ A. religious leader or saint
- ✗ B. common man
- ✗ C. place
- ✗ D. king or queen

Question ID : **9767557725**
Status : **Answered**
Chosen Option : **4**

Q.7 Which is the most literate state of India according to Census 2011?

Ans
- ✗ A. Delhi
- ✗ B. Assam
- ✗ C. Goa
- ✓ D. Kerala

Question ID : **9767557721**
Status : **Answered**
Chosen Option : **4**

Q.8 Which is the only metal whose natural form is liquid?

Ans
✗ A. Tin
✗ B. Sodium
✓ C. Mercury
✗ D. Iron

Question ID : **9767557719**
Status : **Answered**
Chosen Option : **3**

Q.9 The name 'Hindu' was coined through Persian language from a Sanskrit word meaning _____.

Ans
✗ A. a particular religion
✓ B. Sindhu, the river Indus
✗ C. cultured
✗ D. belonging

Question ID : **9767557723**
Status : **Answered**
Chosen Option : **3**

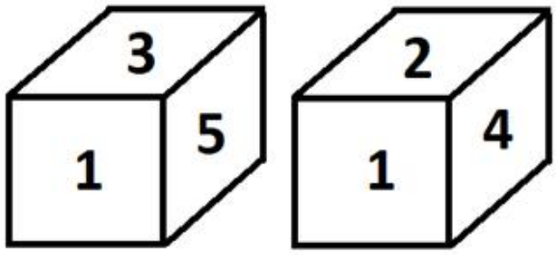
Q.10 Which of the following rulers ruled Vijayanagar Empire?

Ans
✗ A. Tenali Raman
✗ B. Chandragupta
✗ C. Vikramaditya
✓ D. Krishnadeva Raya

Question ID : **9767557724**
Status : **Answered**
Chosen Option : **4**

Section : **General Intelligence**

Q.1 Two different positions of the same dice are shown. Select the number that will be on the face opposite to the face having the number 1.



Ans
- ✔ A. 6
- ✘ B. 2
- ✘ C. 4
- ✘ D. 3

Question ID : **9767557740**
Status : **Answered**
Chosen Option : **1**

Q.2 Read the given statements and conclusions carefully. Assuming that the information given in the statements is true, even if it appears to be at variance with commonly known facts, decide which of the given conclusions logically follow(s) from the statements.
Statements:
1. All pads are keyboards.
2. All keyboards are monitors.
Conclusions:
I. Some keyboards are pads.
II. Some monitors are pads.

Ans
- ✘ A. Only conclusion I follows
- ✔ B. Both conclusions I and II follow
- ✘ C. Neither conclusion I nor II follows
- ✘ D. Only conclusion II follows

Question ID : **9767557733**
Status : **Answered**
Chosen Option : **2**

Q.3 Select the option in which the numbers are related in the same way as are the numbers of the following set.
(258, 112, 146)

Ans
- ✘ A. (245, 120, 115)
- ✔ B. (145, 90, 55)
- ✘ C. (60, 20, 3)
- ✘ D. (40, 4, 10)

Question ID : **9767557737**
Status : **Answered**
Chosen Option : **4**

Q.4 During a discussion, a group of 8 classmates, namely Sunita, Faheem, Anupam, Dickson, Bano, Dilan, Juhi and Punit, are sitting in a circle, facing the centre. Bano is sitting between Punit and Dilan. Dickson is sitting between Anupam and Punit. Bano and Juhi are not sitting opposite each other. Sunita is third to the left of Bano and second to the right of Anupam.
Who is third to the left of Sunita?

Ans
✗ A. Anupam
✓ B. Dickson
✗ C. Faheem
✗ D. Bano

Question ID : **9767557734**
Status : **Answered**
Chosen Option : **2**

Q.5 Select the correct mirror image of the given figure when the mirror is placed on the line MN.

Ans

✗ A.

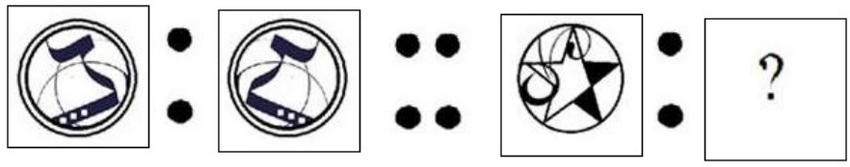
✗ B.

✓ C.

✗ D.

Question ID : **9767557741**
Status : **Answered**
Chosen Option : **3**

Q.6 Select the option that is related to the third figure in the same way as the second figure is related to the first figure.



Ans

✗ A. 

✓ B. 

✗ C. 

✗ D. 

Question ID : **9767557739**
Status : **Answered**
Chosen Option : **2**

Q.7 Select the letter-cluster from among the given options that can replace the question mark (?) in the following series.
KB, ED, YF, SH, ?

Ans

✗ A. LI

✓ B. MJ

✗ C. MK

✗ D. LK

Question ID : **9767557727**
Status : **Answered**
Chosen Option : **2**

Q.8 Select the alphanumeric-cluster from among the given options that can replace the question mark (?) in the following series.
R36, T25, X16, Z9, D4, ?

Ans
✗ A. F2
✗ B. H1
✗ C. H0
✓ D. F1

Question ID : **9767557728**
Status : **Answered**
Chosen Option : **4**

Q.9 Select the option in which the letter-clusters share the same relationship as that shared by the given pair of letter-clusters.
HL : MG

Ans
✗ A. TO: WJ
✗ B. MQ: RM
✗ C. RV : WT
✓ D. IN : NI

Question ID : **9767557730**
Status : **Answered**
Chosen Option : **2**

Q.10 Select the alphanumeric-cluster from among the given options that can replace the question mark (?) in the following series.
Z49, ?, Y25, P,16 J9

Ans
✗ A. I38
✗ B. J36
✗ C. L36
✓ D. K36

Question ID : **9767557731**
Status : **Answered**
Chosen Option : **4**

Q.11 Select the number from among the given options that can replace the question mark (?) in the following series.
28, 56, 168, 840, ?, 64680

Ans
✓ A. 5880
✗ B. 7560
✗ C. 5040
✗ D. 6580

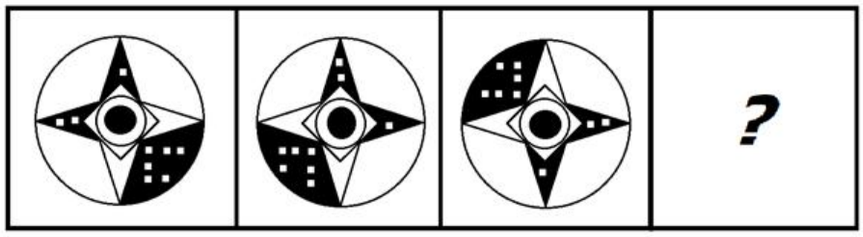
Question ID : **9767557736**
Status : **Answered**
Chosen Option : **1**

Q.12 **Select the number from among the given options that can replace the question mark (?) in the following series.**
18, 19, 42, 135, 556, ?

Ans
- ✗ A. 2240
- ✗ B. 3000
- ✓ C. 2805
- ✗ D. 2800

Question ID : **9767557732**
Status : **Answered**
Chosen Option : **3**

Q.13 Select the figure from among the given options that can replace the question mark (?) in the following series.



Ans

✗ A.

✓ B.

✗ C.

✗ D.

Question ID : **9767557738**
Status : **Answered**
Chosen Option : **2**

Q.14 Select the correct option that indicates the arrangements of the given words in a logical and meaningful order.
1. Interview
2. Job
3. Application
5. Exam
6. Publicity
4. Selection

Ans
✗ A. 6, 5, 3, 1, 4, 2
✗ B. 6, 3, 5, 1, 2, 4
✗ C. 2, 4, 5, 1, 3, 6
✓ D. 6, 3, 5, 1, 4, 2

Question ID : **9767557735**
Status : **Answered**
Chosen Option : **4**

Q.15 Select the option that is related to the third word in the same way as the second word is related to the first word.
Angle : Radian :: Energy : ?

Ans
✗ A. Watt
✗ B. Power
✗ C. Strength
✓ D. Joule

Question ID : **9767557729**
Status : **Answered**
Chosen Option : **4**

Section : **General Aptitude**

Q.1 If the cost of 12 pens is Rs. 36, then find the cost of 240 pens.

Ans
✗ A. Rs. 750
✗ B. Rs. 690
✗ C. Rs. 660
✓ D. Rs. 720

Question ID : **9767557747**
Status : **Answered**
Chosen Option : **4**

Q.2 If $57.2506 = 5A + \frac{7}{B} + 2C + \frac{5}{D} + 6E$, then find the value of $(A + B + C + D + E)$.

Ans
✗ A. 101.0011
✗ B. 101.1010
✓ C. 111.1001
✗ D. 110.1110

Question ID : **9767557745**
Status : **Answered**
Chosen Option : **2**

Q.3 If m and n are the two digits of the number 1798mn such that this number is divisible by 70, then (m + n) is equal to:

Ans
✗ A. 4
✗ B. 1
✗ C. 2
✓ D. 3

Question ID : **9767557742**
Status : **Answered**
Chosen Option : **4**

Q.4 Ten men went to a hotel. Nine of them spent Rs. 50 each on their meals, and the tenth spent Rs. 9 more than the average of all of them. How much did the tenth man spend?

Ans
✗ A. Rs. 59
✗ B. Rs. 62
✓ C. Rs. 60
✗ D. Rs. 51

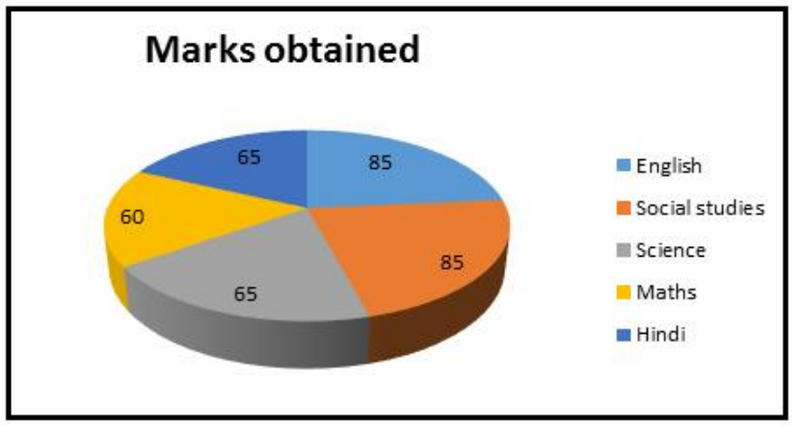
Question ID : **9767557752**
Status : **Answered**
Chosen Option : **1**

Q.5 Aditya was asked to divide a number by 5 and subtract 20 from the quotient. He, however, first subtracted 20 from the number and then divided it by 5, getting 192 as the answer. The correct answer should have been:

Ans
✗ A. 174
✗ B. 178
✗ C. 172
✓ D. 176

Question ID : **9767557755**
Status : **Answered**
Chosen Option : **4**

Q.6



Marks obtained in different subject by a student presented in above diagram, figures being given in terms of the angles formed by the sectors at the centre of the circle. If the total marks were 1800, then the marks in English would be:

Ans

✗ A. 400

✗ B. 325

✗ C. 300

✓ D. 425

Question ID : **9767557756**
Status : **Answered**
Chosen Option : **4**

Q.7 **Meera starts at 7:00 a.m. by bicycle to reach school. She cycles at the speed of 20 km/h and reaches school at 7:30 a.m. What should be Meera's new speed if she has to reach the school at 7:25 am?**

Ans

✓ A. 24 km/h

✗ B. 18 km/h

✗ C. 22 km/h

✗ D. 20 km/h

Question ID : **9767557748**
Status : **Answered**
Chosen Option : **1**

Q.8 **If 20% of (X + Y) = 50% of (X – Y), then find X : Y.**

Ans

✗ A. 2 : 7

✓ B. 7 : 3

✗ C. 7 : 2

✗ D. 3 : 7

Question ID : **9767557746**
Status : **Answered**
Chosen Option : **2**

Q.9 Sara's expenditure and savings are in the ratio of 5 : 1. Her income increases by 10%. If her savings increase by 8%, then by how much percentage her expenditure has increased?

Ans
✗ A. 12.2%
✗ B. 13.4%
✗ C. 14.2%
✓ D. 10.4%

Question ID : **9767557749**
Status : **Answered**
Chosen Option : **4**

Q.10 $\frac{1}{28}+\frac{1}{70}+\frac{1}{130}+\frac{1}{208}+\frac{1}{304}=?$
Evaluate the above expression.

Ans
✗ A. $\frac{13}{76}$
✓ B. $\frac{5}{76}$
✗ C. $\frac{3}{76}$
✗ D. $\frac{15}{76}$

Question ID : **9767557744**
Status : **Answered**
Chosen Option : **2**

Q.11 A rectangular hall, 142 metre long, is paved with 12425 tiles, each measuring 8 dm^2 (decimetre square). The width of the hall is:

Ans
✗ A. 8 m
✗ B. 6 m
✗ C. 9 m
✓ D. 7 m

Question ID : **9767557754**
Status : **Answered**
Chosen Option : **4**

Q.12 A leak in the bottom of a tank can empty the full tank in 8 hours. An inlet pipe fills water at the rate of 3 litres per minute. When the tank is full, the inlet is opened and due to the leak the tank is empty in 10 hours. Find the capacity of the tank.

Ans
✗ A. 6600 litres
✗ B. 7000 litres
✗ C. 6800 litres
✓ D. 7200 litres

Question ID : **9767557750**
Status : **Answered**
Chosen Option : **4**

Q.13 The greatest number of five digits which is divisible by 15, 25, 40 and 75 is:

Ans
✓ A. 99600
✗ B. 99800
✗ C. 96000
✗ D. 94500

Question ID : **9767557743**
Status : **Answered**
Chosen Option : **1**

Q.14 A and B can do a piece of work in 80 days; B and C can do it in 120 days; A and C can do it in 112 days. In how many days can B alone do it?

Ans
✗ A. 182
✗ B. 158
✓ C. 168
✗ D. 172

Question ID : **9767557751**
Status : **Answered**
Chosen Option : **4**

Q.15 @ 5% per annum, the compound interest on a certain sum for two years is Rs. 82 and the simple interest is Rs. 80, find sum.

Ans
✗ A. Rs. 750
✓ B. Rs. 800
✗ C. Rs. 850
✗ D. Rs. 700

Question ID : **9767557753**
Status : **Answered**
Chosen Option : **3**

Section : **General English**

Q.1 **Select the option that expresses the given sentence in passive voice.**
Tensing Norgay established the Himalayan Institute of Mountaineering in Darjeeling on 4 November 1954.

Ans ✔ A. The Himalayan Institute of Mountaineering was established in Darjeeling on 4 November 1954 by Tensing Norgay.

✘ B. Tensing Norgay has established The Himalayan Institute of Mountaineering in Darjeeling on 4th November 1954.

✘ C. Tensing Norgay had established The Himalayan Institute of Mountaineering Darjeeling on 4 November 1954.

✘ D. On 4 November 1954, Tensing Norgay established The Himalayan Institute of Mountaineering in Darjeeling.

Question ID : **9767557768**
Status : **Answered**
Chosen Option : **4**

Q.2 **The following sentence has been divided into parts. One of them may contain an error. Select the part that contains the error from the given options.**
Financial hardships ruined my plans / for a Master's at Cambridge / but this inspired me to help the poor and talented students / to cracking the competitive exam.

Ans ✘ A. but this inspired me to help the poor and talented students

✘ B. Financial hardships ruined my plans

✔ C. to cracking the competition exams

✘ D. for a Master's at Cambridge

Question ID : **9767557763**
Status : **Answered**
Chosen Option : **3**

Q.3 **Fill in the blank with the most appropriate idiom.**

Certain political party leaders woo people through rich oratory and big promises. Innocent and simple people tend to ---------- only to realise how hollow their promises were.

Ans ✔ A. take them at the face value

✘ B. put on a face

✘ C. make a big face

✘ D. lose face

Question ID : **9767557760**
Status : **Answered**
Chosen Option : **4**

Q.4 **Select the option that is expressed in passive voice.**

Ans ✘ A. Take a piece of fine paper and draw your kite scale on it.

✘ B. Now lay your paper on a flat surface and mark three dots to make an isosceles triangle.

✔ C. The kite is then cut along the shape and a tail is attached to it.

✘ D. Finally, attach a string and your kite is ready to fly.

Question ID : **9767557767**
Status : **Answered**
Chosen Option : **4**

Q.5 Sentences of a paragraph are given below. While the first and the last sentences are in the correct order, the sentences in between are jumbled up. Arrange the sentences in the correct order to form a meaningful and coherent paragraph.

S1. At a great celebration in honor of King Lion, the Monkey was asked to dance for the company.

A. But the big hulking Camel made himself very ridiculous as he kicked out his knotty legs and twisted his long clumsy neck.
B. He was very sure that he could dance quite as well as the Monkey, so he pushed his way into the crowd and rising on his hind legs, began to dance.
C. His dancing was very clever indeed, and the animals were all highly pleased with his grace and lightness.
D. The praise that was showered on the Monkey made the Camel envious.

S6. The animals were so disgusted with this dancing that they set upon the Camel in a rage and drove him out into the desert.

Ans
✔ A. CDBA
✘ B. DCBA
✘ C. CADB
✘ D. ACDB

Question ID : **9767557771**
Status : **Answered**
Chosen Option : **3**

Q.6 The following sentence has been divided into parts. One of them may contain an error. Select the part that contains the error from the given options.
After a greatest period of hustling and grinding / through the modelling world / Deepika finally got her break in films / with the movie 'Om Shanti Om' at the age of nineteen.

Ans
✔ A. After a greatest period of hustling and grinding
✘ B. Deepika finally got her first break in films
✘ C. with the movie 'Om Shanti Om' at the age of nineteen
✘ D. through the modelling world

Question ID : **9767557764**
Status : **Answered**
Chosen Option : **1**

Q.7 Select the option that is expressed in active voice.

Ans
✘ A. Problem solving situations are included in the selection process for a career in the army.
✘ B. Only two candidates were found suitable for the job.
✔ C. The panel asked very tricky questions from each candidate.
✘ D. Three rounds of interviews were faced by him before he was finally selected.

Question ID : **9767557769**
Status : **Answered**
Chosen Option : **4**

Q.8 Select the most appropriate option to fill in the blanks.

The Odisha Government _____ to develop a world class infrastructure _____ the premises of the Konark temple.

Ans
✗ A. will be planning; at
✗ B. was planning; with
✓ C. is planning; around
✗ D. has planned; about

Question ID : **9767557761**
Status : **Answered**
Chosen Option : **3**

Q.9 Select the option that is NOT an example of indirect speech.

Ans
✗ A. Anirudh said that he wanted to specialise in Artificial Intelligence and work in ISRO.
✗ B. In his first address to the staff after his appointment as CEO he made it clear that he wanted punctuality and excellence.
✗ C. Mr. Sanjeev said that he would like to live in his old village house after retirement.
✓ D. Radha, you look smashing in that golden saree.

Question ID : **9767557766**
Status : **Answered**
Chosen Option : **4**

Q.10 Sentences of a paragraph are given below. While the first and the last sentences are in the correct order, the sentences in between are jumbled up. Arrange the options A to D in the correct order to form a meaningful and coherent paragraph.
S 1: Marketing departments often feel a need to justify their existence.
S 2:_____
S 3:_____
S 4:_____
S 5: _____
S 6: Almost without exception, these compromises are worse than doing nothing.
Options:
A: All too often, we can say their efforts are a result of a compromise.
B: And if retail sales are down, marketers will hire a consultant to freshen up their look.
C: If last year's slogan feels old, they will spend a million dollars to invent and propagate a new one.
D: They will then make compromises either in their budget or in their product.

Ans
✗ A. A, B, D, C
✗ B. A, D, C, B
✓ C. C, B, D, A
✗ D. B, C, D, A

Question ID : **9767557770**
Status : **Answered**
Chosen Option : **3**

Q.11 Select the most appropriate ANTONYM of the given word.
INCLEMENT

Ans
✔ A. Harsh
✘ B. Mild
✘ C. Fair
✘ D. Serene

Question ID : **9767557758**
Status : **Answered**
Chosen Option : **1**

Q.12 Select the most appropriate option to fill in the blank.
As I had to catch an early morning flight, I asked my friend whether I he would drop me at the airport in his car. He gave me a flimsy excuse. That's when I realised, he was only _____.

Ans
✘ A. birds of a feather flock together
✘ B. a friend in need is a friend indeed
✘ C. a friend in high places
✔ D. a fair-weather friend

Question ID : **9767557759**
Status : **Answered**
Chosen Option : **3**

Q.13 Select the option that expresses the given sentence in reported speech.
At an interview, Anand said, "During my childhood days, I lived with my family in a small, rented house by the railway tracks in Patna."

Ans
✘ A. At an interview, Anand recalls that during his childhood days, he lives with his family in a small, rented house by the railway tracks in Patna.
✔ B. At an interview, Anand disclosed that during his childhood days, he lived with his family in a small, rented house by the railway tracks in Patna.
✘ C. At an interview, Anand told that during his childhood days, he lived with his family in a small, rented house by the railway tracks in Patna.
✘ D. At an interview, Anand says that during his childhood days, he lived with his family in a small, rented house by the railway tracks in Patna.

Question ID : **9767557765**
Status : **Answered**
Chosen Option : **4**

Q.14 Select the most appropriate option that can substitute the underlined words in the given sentence.

We started panicking when we found ourselves caught in a terrible <u>snow storm with uncontrollable winds</u>.

Ans
✘ A. whirlpool
✘ B. storm
✔ C. blizzard
✘ D. cyclone

Question ID : **9767557772**
Status : **Answered**
Chosen Option : **3**

Q.15 Select the most appropriate ANTONYM of the given word.
ENTICE

Ans
✗ A. Seduce
✓ B. Repulse
✗ C. Beguile
✗ D. Tempt

Question ID : **9767557757**
Status : **Answered**
Chosen Option : **2**

Q.16 Select the most appropriate option to fill in the blanks.

2020 has been a difficult year for India which had to face twin _____ the Covid-19 pandemic and _____ with neighbouring countries on its borders.

Ans
✗ A. records; wars
✗ B. difficulties; belligerense
✓ C. challenges; skirmishes
✗ D. challenges; peacefulness

Question ID : **9767557762**
Status : **Answered**
Chosen Option : **3**

Comprehension:

Read the given passage and answer the following questions.
India should deploy a dedicated satellite system for tracing and managing its fisheries sector. It should expand its patrolling in the high seas and put in place a 30 year 'holistic' shipbuilding plan under the Atmanirbhar initiative to give a boost to shipping and shipbuilding sector, recommends a draft policy prepared by multiple committees led by the Prime Minister's economic Advisory Council.
The draft is part of India's 'Blue Economy' Framework. This refers to tapping the economic potential from India's oceans and also includes allied activities such as coastal tourism, mariculture, fisheries and deep-sea mining. Currently a 'conservative' estimate of the size of the Blue Economy is about 4% of the Gross Domestic Policy, the report notes.
India's 7,517 km long coastline is home to nine coastal States and 1,382 islands. With 12 major ports and 187 non-major ports, handling about 1,400 million tonnes of cargo, 95% of India's trade by volume transits by sea. India's Exclusive Economic Zone of over two million square kilometres is rich in living and non-living resources and holds significant recoverable resources of crude oil and of recoverable natural gas. The coastal economy also sustains over 4 million fishermen and other coastal communities. "With these vast maritime interests, the Blue Economy in India has a vital relationship with the nation's economic growth," said the report.
The Ministry of Earth Sciences had drafted a similar policy in 2015 but was not finalised.
The present report was prepared by seven committees that had government representatives as well as private organisations such as the Resource Information System for Developing Countries , the National Maritime Foundation , the Energy and Resource Institute, the Federation of Indian Chamber of Commerce & Industry and the Indian Ocean Rim Association.
The Group noted that while there is significant potential for tourism, it was necessary to curb uncontrolled and unplanned tourist activities that cause stress on the carrying capacity of coastal ecosystems, especially those on fragile island territories.

On the basis of your reading of the passage answer the following questions by choosing the best option.

SubQuestion No : 17

Q.17 Which of the following was NOT one of the private organisations involved in creating the draft policy?

Ans

✔ A. The Energy and Resource Foundation

✘ B. National Maritime Foundation

✘ C. Resource Information System for Developing Countries

✘ D. Indian Ocean Rim Association

Question ID : **9767557774**
Status : **Answered**
Chosen Option : **4**

Comprehension:

Read the given passage and answer the following questions.
India should deploy a dedicated satellite system for tracing and managing its fisheries sector. It should expand its patrolling in the high seas and put in place a 30 year 'holistic' shipbuilding plan under the Atmanirbhar initiative to give a boost to shipping and shipbuilding sector, recommends a draft policy prepared by multiple committees led by the Prime Minister's economic Advisory Council.
The draft is part of India's 'Blue Economy' Framework. This refers to tapping the economic potential from India's oceans and also includes allied activities such as coastal tourism, mariculture, fisheries and deep-sea mining. Currently a 'conservative' estimate of the size of the Blue Economy is about 4% of the Gross Domestic Policy, the report notes.
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The Group noted that while there is significant potential for tourism, it was necessary to curb uncontrolled and unplanned tourist activities that cause stress on the carrying capacity of coastal ecosystems, especially those on fragile island territories.

On the basis of your reading of the passage answer the following questions by choosing the best option.

SubQuestion No : 18

Q.18 The central idea as projected in the passage is:

Ans

✗ A. reducing maritime trade activities

✗ B. using satellites to monitor activities along the coastline

✗ C. ushering in the concept of self-reliant India

✓ D. using oceans to boost economic growth

Question ID : **9767557776**
Status : **Answered**
Chosen Option : **4**

Comprehension:

Read the given passage and answer the following questions.
India should deploy a dedicated satellite system for tracing and managing its fisheries sector. It should expand its patrolling in the high seas and put in place a 30 year 'holistic' shipbuilding plan under the Atmanirbhar initiative to give a boost to shipping and shipbuilding sector, recommends a draft policy prepared by multiple committees led by the Prime Minister's economic Advisory Council.
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The Group noted that while there is significant potential for tourism, it was necessary to curb uncontrolled and unplanned tourist activities that cause stress on the carrying capacity of coastal ecosystems, especially those on fragile island territories.

On the basis of your reading of the passage answer the following questions by choosing the best option.

SubQuestion No : 19

Q.19 While submitting the report, the seven-member group has, cautioned the government against:

Ans

✗ A. safeguarding of our vast coastline and the smaller islands

✓ B. unplanned tourist activities which will pose a threat to the ecosystems

✗ C. unwanted monitoring of our coastline through satellite

✗ D. exploitation of inhabitants of the smaller islands in the region

Question ID : **9767557777**
Status : **Answered**
Chosen Option : **2**

Comprehension:

Read the given passage and answer the following questions.
India should deploy a dedicated satellite system for tracing and managing its fisheries sector. It should expand its patrolling in the high seas and put in place a 30 year 'holistic' shipbuilding plan under the Atmanirbhar initiative to give a boost to shipping and shipbuilding sector, recommends a draft policy prepared by multiple committees led by the Prime Minister's economic Advisory Council.
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The Group noted that while there is significant potential for tourism, it was necessary to curb uncontrolled and unplanned tourist activities that cause stress on the carrying capacity of coastal ecosystems, especially those on fragile island territories.

On the basis of your reading of the passage answer the following questions by choosing the best option.

SubQuestion No : 20

Q.20 The term 'a conservative budget' implies:

Ans

✔ A. a balanced budget

✘ B. an interim budget

✘ C. a supplementary budget

✘ D. an inflexible budget

Question ID : **9767557775**
Status : **Answered**
Chosen Option : **4**

Section : **Domain Questions**

Q.1 Find the angle between the pair of lines

$$\frac{x-5}{3}=\frac{y+2}{5}=\frac{z+2}{4}$$

And $\frac{x-1}{1}=\frac{y-3}{1}=\frac{z-3}{2}$

Ans

✗ A. $\cos^{-1}\frac{15}{2\sqrt{3}}$

✗ B. $\cos^{-1}\frac{15}{8\sqrt{3}}$

✗ C. $\cos^{-1}\frac{2\sqrt{3}}{15}$

✓ D. $\cos^{-1}\frac{8\sqrt{3}}{15}$

Question ID : **9767557792**
Status : **Answered**
Chosen Option : **3**

Q.2 **Which of the following measures as vector quantity?**

Ans

✗ A. 10 kg

✗ B. 40°

✓ C. $20\ m/s^2$

✗ D. 10^{-19} coulomb

Question ID : **9767557778**
Status : **Answered**
Chosen Option : **4**

Q.3 **A point possesses simultaneously velocities whose measures are 4, 3, 2 and 1; the angle between the first and second is 30°, between the second and third 90°, and between the third and fourth 120° ; find resultant velocity and angle to the direction of the first velocity?**

Ans

✓ A. 5.62, 24°54

✗ B. 7.40, 18°44

✗ C. 4.42, 22°32

✗ D. 2.81, 12°27

Question ID : **9767557784**
Status : **Answered**
Chosen Option : **1**

Q.4 Figure-out the number of ways can 5 women and 3 men be seated in a row so that two men are together?

Ans
- ✗ A. 7200
- ✗ B. 2400
- ✗ C. 720
- ✓ D. 14400

Question ID : **9767557795**
Status : **Answered**
Chosen Option : **1**

Q.5 Urn A consists 3 blue and 4 green balls while another urn B consists 5 blue and 6 green balls. One ball is drawn at random from one of the urns and it is found to be blue. Determine the probability that it was drawn from urn B?

Ans
- ✓ A. $\frac{35}{68}$
- ✗ B. $\frac{34}{77}$
- ✗ C. $\frac{77}{34}$
- ✗ D. $\frac{68}{35}$

Question ID : **9767557789**
Status : **Answered**
Chosen Option : **1**

Q.6 If an event E has only one sample point of a sample space, it is called a _____

Ans
- ✓ A. Simple events
- ✗ B. Impossible events
- ✗ C. Compound events
- ✗ D. Sure events

Question ID : **9767557799**
Status : **Answered**
Chosen Option : **4**

Q.7 Determine the value of $\sin\frac{21\pi}{2}$ and $\cos(-1740^0)$?

Ans

✔ A. $1, \frac{1}{2}$

✘ B. $\frac{\sqrt{3}}{2}, \frac{1}{\sqrt{2}}$

✘ C. $\frac{\sqrt{3}}{2}, \frac{1}{2}$

✘ D. $0, \frac{1}{\sqrt{2}}$

Question ID : **9767557807**
Status : **Answered**
Chosen Option : **1**

Q.8 **A point is moving with uniform acceleration, in the eleventh and fifteenth seconds from the commencement it moves through 640 and 840 cms respectively, find its initial velocity, and the acceleration with which it moves?**

Ans

✘ A. 90 cm/s, 60 cm/s

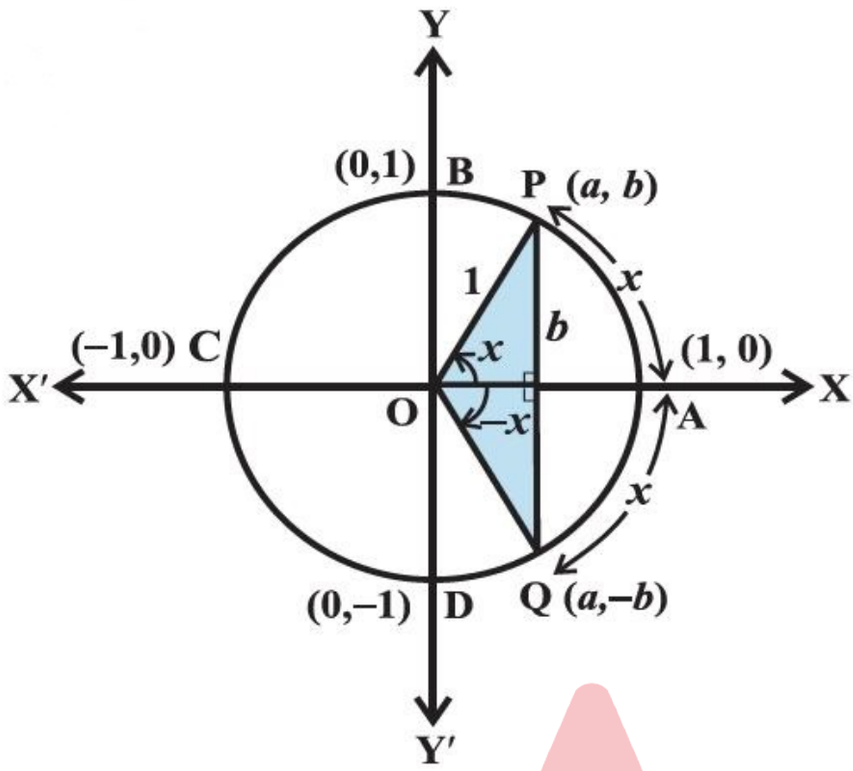
✘ B. 100 cm/s, 45 cm/s

✘ C. 135 cm/s, 60 cm/s

✔ D. 115 cm/s, 50 cm/s

Question ID : **9767557787**
Status : **Answered**
Chosen Option : **4**

Q.9



Which below option is true for fourth quadrant as per above figure?

Ans

✗ A. $(\pi < x < \frac{3\pi}{2})$ a is positive and b is negative

✗ B. $(\frac{\pi}{2} < x < \pi)$ a is positive and b is negative

✓ C. $(\frac{3\pi}{2} < x < 2\pi)$ a is positive and b is negative

✗ D. $(0 < x < \frac{\pi}{2})$ a is positive and b is negative

Question ID : **9767557806**
Status : **Answered**
Chosen Option : **3**

Q.10 A line is uniquely determined if _____.

Ans

✗ A. It passes through any given segment

✓ B. It passes through two given points

✗ C. It if intersects given points and line segments in combination

✗ D. It is specified directionless

Question ID : **9767557790**
Status : **Answered**
Chosen Option : **2**

Q.11 **Which of the following is the direction cosines of z, y and x-axis?**

Ans

✗ A. (0,1,0) (1,0,0) and (0,0,1)

✗ B. (0,1,0) (1,0,0) and (1,0,1)

✗ C. (0,1,0) (0,0,1) and (1,0,0)

✓ D. (0,0,1) (0,1,0) and (1,0,0)

Question ID : **9767557802**
Status : **Answered**
Chosen Option : **4**

Q.12 What will be the number of permutations of n objects taken all at a time, where p_1 objects are of first kind, p_2 objects are of second kind, ….p_k objects are of k^{th} kind and rest, if any are all different?

Ans

✗ A. $n! / p_1 n_1! P_2! n_2 .... p_k n_k!$

✓ B. $n! / p_1! P_2! .... p_k!$

✗ C. n^r

✗ D. n^k

Question ID : **9767557794**
Status : **Answered**
Chosen Option : **2**

Q.13 **If the arcs of the same lengths in two circles subtend angles 70° and 120° at the centre, determine the ratio of their radii?**

Ans

✗ A. 24:15

✓ B. 24:14

✗ C. 22:13

✗ D. 22:14

Question ID : **9767557805**
Status : **Answered**
Chosen Option : **2**

Q.14 **A batch comprises of 4 red and 7 green uniform boys. Figure out the number of methods can a squad of 5 unit be picked if the squad has (i) at least one red and one green uniform boy (ii) at least 3 red uniform boys?**

Ans

✗ A. (i) 144, (ii)27

✗ B. (i) 441, (ii)27

✓ C. (i) 441, (ii)91

✗ D. (i) 144, (ii)81

Question ID : **9767557798**
Status : **Answered**
Chosen Option : **3**

Q.15 Find degree measure of 6 radians?

Ans

✗ A. 334° 38′ 11″ approximately

✗ B. 327° 38′ 11″ approximately

✓ C. 343° 38′ 11″ approximately

✗ D. 337° 38′ 11″ approximately

Question ID : **9767557804**
Status : **Answered**
Chosen Option : **3**

Q.16 If $\cos x = \frac{5}{13}$, x lies in the third quadrant, determine the value of other five trigonometric functions?

Ans

✓ A. $\text{Sec } x = \frac{13}{5}, \sin x = -\frac{12}{13}, \text{cosec } x = -\frac{13}{12}, \tan x = -\frac{12}{5}, \cot x = -\frac{5}{12}$

✗ B. $\text{Sec } x = \frac{13}{5}, \sin x = \frac{12}{13}, \text{cosec } x = \frac{13}{12}, \tan x = -\frac{12}{5}, \cot x = -\frac{5}{12}$

✗ C. $\text{Sec } x = \frac{13}{5}, \sin x = -\frac{12}{13}, \text{cosec } x = -\frac{13}{12}, \tan x = \frac{12}{5}, \cot x = \frac{5}{12}$

✗ D. $\text{Sec } x = \frac{13}{5}, \sin x = \frac{12}{13}, \text{cosec } x = \frac{13}{12}, \tan x = \frac{12}{5}, \cot x = \frac{5}{12}$

Question ID : **9767557803**
Status : **Answered**
Chosen Option : **1**

Q.17 An international team has two boxers picked for an international sport event. What is the probability that both the boxers are men given that at least one of them is a man?

Ans

✓ A. $\frac{1}{3}$

✗ B. $\frac{1}{2}$

✗ C. $\frac{1}{4}$

✗ D. $\frac{1}{5}$

Question ID : **9767557785**
Status : **Answered**
Chosen Option : **2**

Q.18 60 is the total number of words with or without definition which can be made using all letters of the word AGAIN. Figure-out the 49th word if these words are mentioned as in wordbook?

Ans
✔ A. NAAGI
✘ B. NAIGA
✘ C. NAAIG
✘ D. NAGIA

Question ID : **9767557797**
Status : **Answered**
Chosen Option : **1**

Q.19 Determine the vector equation for the line, given the cartesian equation of a line is $\frac{x+5}{3} = \frac{y-7}{2} = \frac{z+3}{2}$?

Ans
✔ A. $\vec{r} = (-5\hat{i} + 7\hat{j} - 3\hat{k}) + \lambda(3\hat{i} + 2\hat{j} + 2\hat{k})$
✘ B. $\vec{r} = (-3\hat{i} + 5\hat{j} - 6\hat{k}) + \lambda(2\hat{i} + 4\hat{j} + 2\hat{k})$
✘ C. $\vec{r} = (-5\hat{i} + 7\hat{j} - 3\hat{k}) + \lambda(2\hat{i} + 4\hat{j} + 2\hat{k})$
✘ D. $\vec{r} = (-3\hat{i} + 5\hat{j} - 6\hat{k}) + \lambda(3\hat{i} + 2\hat{j} + 2\hat{k})$

Question ID : **9767557791**
Status : **Answered**
Chosen Option : **1**

Q.20 Find the probability of occurrence of at least one of A and B, If A and B are two independent events?

Ans
✘ A. P(A') - P(B') + 1
✘ B. P(A') - P(B') - 1
✔ C. 1- P(A') P(B')
✘ D. 1+ P(A') P(B')

Question ID : **9767557788**
Status : **Answered**
Chosen Option : **3**

Q.21 Determine the quantity of different signals that can be created by organizing at least 2 flags in sequence (one below the other) on a vertical staff, if 5 different flags are available?

Ans
✔ A. 320
✘ B. 120
✘ C. 420
✘ D. 440

Question ID : **9767557796**
Status : **Answered**
Chosen Option : **2**

Q.22 Which of the following is true?

Ans
- ✗ A. Two vectors having same magnitude are collinear
- ✗ B. Two collinear vectors are always equal in magnitude
- ✓ C. $\vec{a}$ and $-\vec{a}$ are collinear
- ✗ D. Two collinear vectors having the same magnitude are equal

Question ID : **9767557781**
Status : **Answered**
Chosen Option : **3**

Q.23 In a job placement event, there are 1000 aspirants attending a company interview, out of which 430 are females. It is familiar that out of 430, 10 % of the females are graduate. Determine the probability that an aspirant selected randomly is graduate given that the selected aspirant is a female?

Ans
- ✗ A. 4.3
- ✗ B. 0.43
- ✗ C. 0.01
- ✓ D. 0.1

Question ID : **9767557786**
Status : **Answered**
Chosen Option : **4**

Q.24 Find the vector and Cartesian equations of the plane which passes through the point (5, 2, -4) and perpendicular to the line with direction ratios 2, 3, -1?

Ans
- ✗ A. 2x + 3y −5z = 24
- ✗ B. 2x + 5y −7z = 15
- ✓ C. 2x + 3y −z = 20
- ✗ D. x + 2y −3z = 18

Question ID : **9767557793**
Status : **Answered**
Chosen Option : **3**

Q.25 A die is thrown 3 times. Events A and B stated below:
4 on the 3rd throw
6 on the 1st and 5 on the 2nd throw
What will be the probability of A knowing that B has already taken place?

Ans
- ✗ A. $\frac{1}{36}$
- ✗ B. $\frac{1}{216}$
- ✗ C. $\frac{1}{108}$
- ✓ D. $\frac{1}{6}$

Question ID : **9767557800**
Status : **Answered**
Chosen Option : **4**

Q.26 If $\vec{a} = 2\hat{i}+2\hat{j}+3\hat{k}$, $\vec{b} = -\hat{i}+2\hat{j}+\hat{k}$ and $\vec{c} = 3\hat{i}+\hat{j}$ are such that $\vec{a}+\gamma\vec{b}$ is perpendicular to $\vec{c}$, then determine the value of γ?

Ans

✗ A. 4

✗ B. 0

✗ C. 3

✓ D. 8

Question ID : **9767557780**
Status : **Answered**
Chosen Option : **4**

Q.27 Determine $|\vec{a}|$ and $|\vec{b}|$, if $(\vec{a}+\vec{b}).(\vec{a}-\vec{b}) = 8$ and $|\vec{a}| = 8|\vec{b}|$?

Ans

✓ A. $\frac{16\sqrt{2}}{3\sqrt{7}}, \frac{2\sqrt{2}}{3\sqrt{7}}$

✗ B. $\frac{8\sqrt{2}}{3\sqrt{7}}, \frac{2\sqrt{2}}{3\sqrt{7}}$

✗ C. $\frac{16\sqrt{6}}{3\sqrt{7}}, \frac{2\sqrt{2}}{3\sqrt{7}}$

✗ D. $\frac{8\sqrt{3}}{3\sqrt{7}}, \frac{2\sqrt{3}}{3\sqrt{7}}$

Question ID : **9767557779**
Status : **Answered**
Chosen Option : **1**

Q.28 If the vertices A,B,C of a triangle ABC are (1,1,3), (-1,0,0),(0,1,2) respectively, then determine $\angle ABC$. ($\angle ABC$ is the angle between the vectors $\overrightarrow{BA}$ and $\overrightarrow{BC}$)

Ans

✓ A. $\text{Cos}^{-1}\left(\frac{9}{84}\right)$

✗ B. $\text{Cos}^{-1}\left(\frac{9}{\sqrt{14}x\sqrt{6}}\right)$

✗ C. $\text{Cos}^{-1}\left(\frac{10}{102}\right)$

✗ D. $\text{Cos}^{-1}\left(\frac{9}{\sqrt{14}x\sqrt{9}}\right)$

Question ID : **9767557782**
Status : **Answered**
Chosen Option : **1**

Q.29 If a moving point possess simultaneously velocities which are represented in magnitude and direction by the _____ of a parallelogram drawn from a point, they are equivalent to a velocity which is represented in magnitude and direction by the _____ of the parallelogram passing through the point.

Ans
- ✗ A. Smallest side, diagonal
- ✗ B. Diagonal, One side
- ✗ C. Diagonal, two sides
- ✓ D. Two sides, diagonal

Question ID : **9767557783**
Status : **Answered**
Chosen Option : **4**

Q.30 Determine the direction cosines of the line passing through the two points (-2, 3, -4) and (1, 2, 3)?

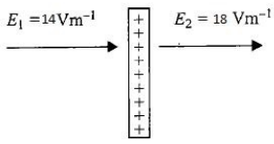
Ans
- ✗ A. $\frac{3}{\sqrt{361}}, \frac{-1}{\sqrt{361}}, \frac{19}{\sqrt{361}}$
- ✓ B. $\frac{3}{\sqrt{179}}, \frac{-1}{\sqrt{179}}, \frac{13}{\sqrt{179}}$
- ✗ C. $\frac{5}{\sqrt{411}}, \frac{-5}{\sqrt{411}}, \frac{19}{\sqrt{411}}$
- ✗ D. $\frac{5}{\sqrt{387}}, \frac{-1}{\sqrt{387}}, \frac{19}{\sqrt{387}}$

Question ID : **9767557801**
Status : **Answered**
Chosen Option : **4**

Q.31 A galvanometer coil has resistance 20 Ω and the metre shows full scale deflection for a current of 2 mA. How will you convert the metre into an ammeter of range 0 to 6 A?

Ans
- ✓ A. A 6.66 mΩ shunt resistor is to be connected in series with the galvanometer
- ✗ B. A 10.55 mΩ shunt resistor is to be connected in parallel with the galvanometer
- ✗ C. A 6.66 mΩ shunt resistor is to be connected in parallel with the galvanometer
- ✗ D. A 10.55 mΩ shunt resistor is to be connected in series with the galvanometer

Question ID : **9767557835**
Status : **Answered**
Chosen Option : **3**

Q.32 

What will be the charge density on the plate in S.I. units. The electric field on two sides of a large charged plate is shown in the above figure. (ε_0 is the permittivity of free space in S.I. units)

Ans

✗ A. $2\varepsilon_0$

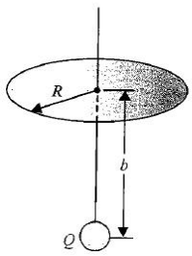
✗ B. $16\varepsilon_0$

✗ C. 0

✓ D. $4\varepsilon_0$

Question ID : **9767557827**
Status : **Answered**
Chosen Option : **4**

Q.33 A point charge Q is located on the axis of a disk of radius R at a distance n from the plane of the disk as shown in below figure. Find the value of R, if $\frac{1}{4}th$ of the electric flux from the charge passes through the disk?



Ans

✗ A. $\sqrt{2\pi b}$

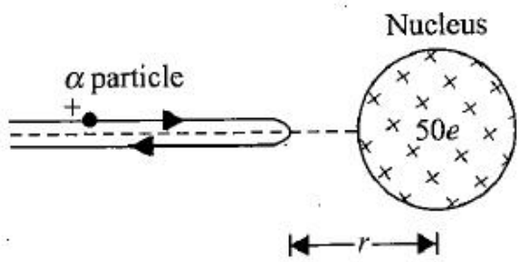
✗ B. $\sqrt{2}b$

✗ C. $\sqrt{3\pi b}$

✓ D. $\sqrt{3}b$

Question ID : **9767557826**
Status : **Answered**
Chosen Option : **1**

Q.34 An alpha particle with kinetic energy 20 MeV is heading towards a stationary tin nucleus of atomic number 50, Compute the distance of closest approach?



Ans
✗ A. 3.6 fm
✗ B. 14.4×10^{-13}
✓ C. 7.2 fm
✗ D. 14.4 fm

Question ID : **9767557830**
Status : **Answered**
Chosen Option : **3**

Q.35 _____ use radio waves to transmit voice communication in the ultrahigh frequency band.

Ans
✗ A. FM
✗ B. AM
✗ C. TV waves
✓ D. Cellular phones

Question ID : **9767557810**
Status : **Answered**
Chosen Option : **4**

Q.36 A plane is in level flight at constant speed and each of its two wings has an area of 20 m^2. If the speed of the air is 198 km/h over the lower wing and 270 km/h over the upper wing. Determine the plane's mass?(Take air density = 1 kg/m^3)

Ans
✗ A. 26000 kg
✗ B. 52000 Kg
✓ C. 5306.1 kg
✗ D. 6432.1 kg

Question ID : **9767557818**
Status : **Answered**
Chosen Option : **2**

Q.37 **A little candle, 4.5 cm in size is located at 30 cm in front of a concave mirror of radius of curvature 42 cm. find the distance from the mirror should a screen be located in order to obtain a sharp image?**

Ans

✔ A. 70 cm

✘ B. 54 cm

✘ C. 105 cm

✘ D. 12.35 cm

Question ID : **9767557814**
Status : **Answered**
Chosen Option : **1**

Q.38 What is the relevant equation if object is at origin and velocity is $v_0 = i + j$?

Ans

✘ A. $r = i(2.5\,t^2 - t) + j(t + 1.5\,t^2)$

✔ B. $r = i(2.5\,t^2 + t) + j(t - 1.5\,t^2)$

✘ C. $r = i(1.5t) + jt^2$

✘ D. $r = (2.5\,t^2 + t) + j(t - t^2)$

Question ID : **9767557819**
Status : **Answered**
Chosen Option : **2**

Q.39 Light with an energy flux of 18 W/cm^2 falls on a non-reflecting surface at normal incidence. If the surface has an area of 20 cm^2, find the total momentum delivered (for complete absorption) during a 30 minute time span?

Ans

✘ A. 2.16×10^{-5} kg/s

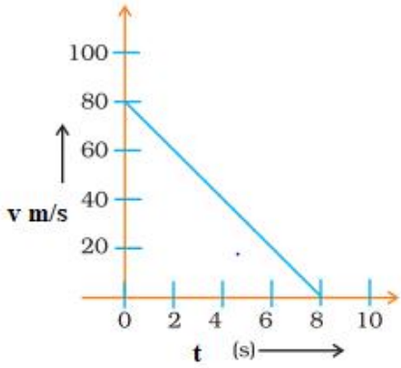
✘ B. 2.16×10^{-2} kg m/s

✘ C. 2.16 kg m/s

✔ D. 2.16×10^{-3} kg m/s

Question ID : **9767557808**
Status : **Answered**
Chosen Option : **4**

Q.40 Given figure shows velocity-time graph of a ball of mass 250g rolling on a concrete floor. Compute the acceleration and the frictional force of the floor on the ball?



Ans

✗ A. $-5\ m/s^2$, -2 N

✓ B. $-10\ m/s^2$, -3 N

✗ C. $-5\ m/s^2$, -2.5 N

✗ D. $-10\ m/s^2$, -1 N

Question ID : **9767557823**
Status : **Answered**
Chosen Option : **2**

Q.41 A particle of 15 kg is moving in a constant acceleration 3 m/s^2 starting from rest. Find the momentum(P) and velocity(v) as per the table given below:

S.No.	Time	Momentum	Velocity
1	0.5 sec		
2	1.5 sec		
3	2 sec		
4	3 sec		

Ans

✗ A.
1. P = 22.5 Kg m/s, v = 1.5 m/s
2. P = 67.5 Kg m/s, v = 4.5 m/s
3. P = 105 Kg m/s, v = 6 m/s
4. P = 135 Kg m/s, v = 9 m/s

✗ B.
1. P = 22.5 Kg m/s, v = 1.5 m/s
2. P = 67.5 Kg m/s, v = 4.5 m/s
3. P = 90 Kg m/s, v = 6 m/s
4. P = 105 Kg m/s, v = 7 m/s

✓ C.
1. P = 22.5 Kg m/s, v = 1.5 m/s
2. P = 67.5 Kg m/s, v = 4.5 m/s
3. P = 90 Kg m/s, v = 6 m/s
4. P = 135 Kg m/s, v = 9 m/s

✗ D.
1. P = 22.5 Kg m/s, v = 1.5 m/s
2. P = 67.5 Kg m/s, v = 4.5 m/s
3. P = 90 Kg m/s, v = 6.5 m/s
4. P = 120 Kg m/s, v = 9 m/s

Question ID : **9767557821**
Status : **Answered**
Chosen Option : **2**

Q.42 **A parallel plate capacitor made of circular plates each of radius R = 6.0 cm has a capacitance C = 100 pF. The capacitor is connected to a 230 V AC supply with an (angular) frequency of 320 rad/s. What is the rms value of conduction current?**

Ans

✓ A. 7.36 μA

✗ B. 7.36×10^{-12} A

✗ C. 6.90 μA

✗ D. 6.96×10^{-12} A

Question ID : **9767557811**
Status : **Answered**
Chosen Option : **2**

Q.43 **Which of the following statement is CORRECT regarding the locus of point on this plane where the potential has a value zero,if two electric charges q and -2q are placed at a distance 6m apart on a horizontal plane.**

Ans

✔ A. The locus of the point is a circle with radius 4 m and center (-2, 0)

✘ B. The locus of the point is a circle with radius 16 m and center (-2, 0)

✘ C. The locus of the point is a circle with radius 16 m and center (-4, 0)

✘ D. The locus of the point is a circle with radius 24 m and center (-4, 0)

Question ID : **9767557828**
Status : **Answered**
Chosen Option : **3**

Q.44 A hydraulic lift is used to raise a car of mass 2000 kg. The area of cross-section of piston on which the car is placed is 375 cm^2. What pressure the smaller piston has to bear if bigger piston is 2m higher than the smaller piston? The density of oil used in the lift is 800 kg/m^3 and g = 9.8 m/s^2.

Ans

✘ A. $6.77 \times 10^5\ N/m^2$

✘ B. $5.22 \times 10^5\ N/m^2$

✔ C. $5.37 \times 10^5\ N/m^2$

✘ D. $7.155 \times 10^5\ N/m^2$

Question ID : **9767557817**
Status : **Answered**
Chosen Option : **3**

Q.45 **What will be the electric field intensity at the point P due to a short dipole if the dipole is placed in air or vaccum?**

Ans

✔ A. $\frac{1}{4\pi\varepsilon_0}\frac{2p}{r^3}$

✘ B. $\frac{1}{4\pi\varepsilon_0}\frac{2\vec{p}}{r^2}$

✘ C. $\frac{1}{4\pi\varepsilon_0 K}\frac{2p}{r^3}$

✘ D. $\frac{1}{4\pi\varepsilon_0 K}\frac{2p}{r^2}$

Question ID : **9767557829**
Status : **Answered**
Chosen Option : **3**

Q.46 **A circular coil of wire consisting of 500 turns, each of radius 6.0 cm carries a current of 0.30 A. Find the magnitude of the magnetic field B at the center of the coil?**

Ans

✗ A. $3.14\times10^{-4}\,\mathrm{T}$

✗ B. $3.14\times10^{-3}\,\mathrm{T}$

✗ C. $5.0\times10^{-3}\,\mathrm{T}$

✓ D. $5.0\times10^{-4}\,\mathrm{T}$

Question ID : **9767557834**
Status : **Answered**
Chosen Option : **2**

Q.47 What is the period of revolution T of charge $-q_1$ if a particle of mass m carrying a charge $-q_1$ starts moving around a fixed charge $+q_2$ along a circular path of radius r ?

Ans

✓ A. $T=\sqrt{\frac{16\pi^3\epsilon_0 mr^3}{q_1q_2}}$

✗ B. $T=\sqrt{\frac{16\pi^3\epsilon_0 mr^3}{q_1}}$

✗ C. $T=\sqrt{\frac{16\pi^2\epsilon_0 mr^3}{q_1}}$

✗ D. $T=\sqrt{\frac{16\pi^2\epsilon_0 mr^3}{q_1q_2}}$

Question ID : **9767557824**
Status : **Answered**
Chosen Option : **3**

Q.48 A block of surface area 0.2 m^2 is placed on a frictionless horizontal surface having a 0.20 mm thick uniform layer of liquid. On applying a constant horizontal force 0.010 kgf on the block, it begins to move with a constant speed 0.075 m/s. calculate the coefficient of viscosity of the liquid.(g= 10 N kg^{-1})

Ans

✗ A. $3.53\times10^{-3}Pa\times s$

✓ B. $1.33\times10^{-3}Pa\times s$

✗ C. $35.3\times10^{-3}Pa\times s$

✗ D. $13.3\times10^{-3}Pa\times s$

Question ID : **9767557832**
Status : **Answered**
Chosen Option : **3**

Q.49 Which of the following physical quantities belongs to dimension $MLT^{-2}A^{-2}$?

Ans

✔ A. Permeability of free space

✘ B. Magnetic moment

✘ C. Torsion constant

✘ D. Magnetic field

Question ID : **9767557833**
Status : **Answered**
Chosen Option : **4**

Q.50 **Which of the following is NOT the characteristic of electromagnetic waves?**

Ans

✘ A. Electromagnetic wave follows the principle of superposition

✘ B. Electromagnetic wave propagation does not require any material medium to travel

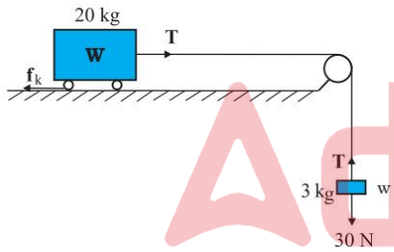
✘ C. The electric vector is the reason for the optical effects due to an electromagnetic wave

✔ D. Moving charges are responsible to produce electromagnetic waves

Question ID : **9767557809**
Status : **Answered**
Chosen Option : **1**

Q.51 Given the co-efficient of kinetic friction between trolley and the surface is 0.06. Neglecting the mass of string determine the acceleration of block and trolley system of given diagram along with the tension in the string? (consider g = 10 m/s^2)

(Choose the most approximate values)



Ans

✘ A. $a = 1.82\, m/s^2, \mathrm{T} = 27.54\ \mathrm{N}$

✘ B. $a = 1.82\, m/s^2, \mathrm{T} = 24.54\ \mathrm{N}$

✘ C. $a = 0.96\, m/s^2, \mathrm{T} = 24.1\ \mathrm{N}$

✔ D. $a = 0.79\, m/s^2, \mathrm{T} = 27.63\ \mathrm{N}$

Question ID : **9767557820**
Status : **Answered**
Chosen Option : **2**

Q.52 Which of the following statements is INCORRECT for heat?

Ans
✗ A. When two bodies are mixed, total heat is equal to the sum of the heat contents of the two bodies.

✗ B. It is measured by the principle of calorimetry.

✓ C. The temperature of the two bodies are same even if their heat contents are different.

✗ D. Heat content of body depends on its mas, temperature and nature.

Question ID : **9767557836**
Status : **Answered**
Chosen Option : **2**

Q.53 An object is placed in front of a concave mirror of radius of curvature 15 cm at:
a) 10 cm
b) 5 cm
Determine the case among (a) & (b), in which image is magnified, virtual and erect?

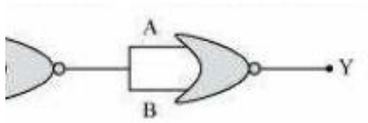
Ans
✗ A. Both case (a) & (b)

✓ B. Case (b) ; when image is placed at 5 cm

✗ C. Case (a); when image is placed at 10 cm

✗ D. Neither in case (a) nor in case (b)

Question ID : **9767557813**
Status : **Answered**
Chosen Option : **2**



correct truth table for the above circuit which contains NOR gates and vant logic operation performed by this circuit?

Input		Output
A	B	Y
0	0	1
0	1	0
1	0	0
1	1	0

, NOR gate

Input		Output
A	B	Y
0	0	1
0	1	1
1	0	1
1	1	0

, NAND gate

Input		Output
A	B	Y
0	0	0
0	1	1
1	0	1
1	1	1

, OR gate

Input		Output
A	B	Y
0	0	0
0	1	0
1	0	0

Q.55 **A radio can tune in to any station in the 6 MHz to 10 MHz band. Find the corresponding wavelength band?**

Ans

✗ A. 100 m to 60 m

✓ B. 50 m to 30 m

✗ C. 40 m to 25 m

✗ D. 36 m to 100 m

Question ID : **9767557812**
Status : **Answered**
Chosen Option : **3**

Q.56 At what depth from surface of water, the pressure will be equal to three times the atmosphere pressure? Given atmospheric pressure = 10 N/cm^2 and g = 9.8 m/s^2.

Ans

✗ A. 2.8 m

✗ B. 5.6 m

✓ C. 20. 4 m

✗ D. 10.2 m

Question ID : **9767557816**
Status : **Answered**
Chosen Option : **2**

Q.57 **Find the focal length of a convex lens of focal length 50 cm in contact with a concave lens of focal length 40 cm? Also find the correct lens system?**

Ans

✓ A. 200 cm, diverging lens

✗ B. 200 cm, converging lens

✗ C. 300 cm, diverging lens

✗ D. 300 cm, converging lens

Question ID : **9767557815**
Status : **Answered**
Chosen Option : **3**

Q.58 Find the electric field outside the cylinder, a distance r from the axis using Gauss's law, if a long & straight wire is surrounded by a hollow metal cylinder whose axis coincides with that of the wire. The wire has a charge per unit length of λ, and the cylinder has a net charge per unit length of 2λ?

Ans

✗ A. $\frac{3\lambda}{2\pi\varepsilon_0 r}$ radially inward

✓ B. $\frac{3\lambda}{2\pi\varepsilon_0 r}$ radially outward

✗ C. $\frac{2\lambda}{2\pi\varepsilon_0 r}$ radially inward

✗ D. $\frac{2\lambda}{2\pi\varepsilon_0 r}$ radially outward

Question ID : **9767557825**
Status : **Answered**
Chosen Option : **2**

Q.59 A body cools from 70°C to 40°C in 5 minute. Calculate the time it takes to cool from 50°C to 20°C, the temperature of the surroundings is 10°C.

Ans
- ✗ A. 6 minute
- ✗ B. 5 minute
- ✓ C. 9 minute
- ✗ D. 7 minute

Question ID : **9767557837**
Status : **Answered**
Chosen Option : **4**

Q.60 An object of mass 5 kg is sliding with a constant velocity of 12 m/s on a frictionless horizontal table. The force required to keep the object moving with the same velocity is

Ans
- ✗ A. 15 N
- ✗ B. 4 N
- ✓ C. 0 N
- ✗ D. 1 N

Question ID : **9767557822**
Status : **Answered**
Chosen Option : **2**