GOVT. OF NCT OF DELHI
**Delhi Subordinate Services Selection Board**
FC-18, Institutional Area, Karkardooma, Delhi – 110092.
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| Participant ID | |
| --- | --- |
| Participant Name | |
| Test Center Name | East Delhi Assessment Zone |
| Test Date | 29/06/2022 |
| Test Time | 8:30 AM - 10:30 AM |
| Subject | Junior Engineer (Civil) or Section Officer (Civil) |

Section : **Mental Ability**

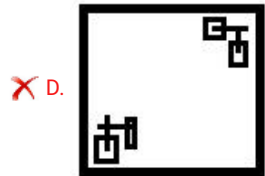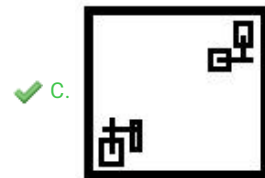**Q.1** In a code language, JOYFUL is written as 534, how will PLAYER be written in that language?
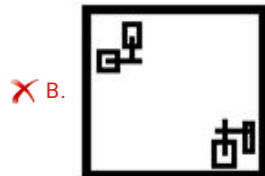
Ans ✗ A. 430

✗ B. 488

✔ C. 462

✗ D. 451

Question ID : **1841223501**

**Q.2** Select the figure that will replace the question mark (?) in the following figure series.



**Ans**

✗ A.



✗ B.



✓ C.



✗ D.
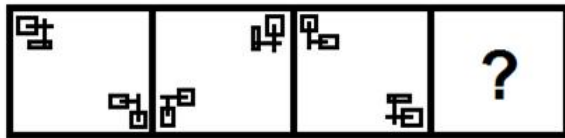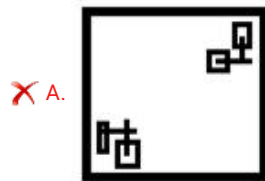
**Q.3** If S < H = M > T and M < P < D then which of following is correct?

**Ans**
✗ A. M > D

✗ B. S = M

✓ C. S < P

✗ D. H > D

**Q.4** Three of the following four word-pairs are alike in some manner and one is different.
Identify the one which is different.

**Ans**
✗ A. Crocodile : Reptile

✗ B. Elephant : Mammal

✗ C. Frog : Amphibian

✓ D. Snail : Fish

**Q.5** Three of the following four letter-clusters are alike in some manner and one is different. Identify the one which is different.

**Ans** ✅ A. RUXAC

❌ B. EHKNQ

❌ C. TWZCF

❌ D. KNQTW

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

MTE : NGV :: PDX : _____

**Ans** ✅ A. KWC

❌ B. KVD

❌ C. SXB

❌ D. LWC

**Q.7** Select the letter cluster that will replace the question mark (?) in the following series.

HQT, KUY, NYD, QCI, ?

**Ans** ❌ A. TFL

✅ B. TGN

❌ C. SGN

❌ D. TFM

**Q.8** Select the figure amongst the option figures which has the same characteristics as the two figures given below.



**Ans**

✗ A. 

✗ B. 

✗ C. 

✔ D. 
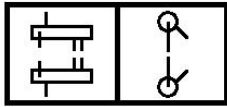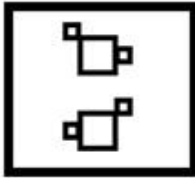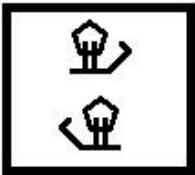
Question ID : **1841223510**

**Q.9** Which two numbers should be interchanged to make the given equation correct?

$$20 \times 8 + 16 \div 4 - 36 = 46$$

**Ans** ✗ A. 16 and 36

✗ B. 8 and 36

✗ C. 20 and 36

✔ D. 8 and 4

Question ID : **1841223514**

**Q.10** Three statements are given, followed by two conclusions numbered I and II. Assuming the statements to be true, even if they seem to be at variance with commonly known facts, decide which of the conclusions logically follow(s) from the statements.

Statement:
All posts are e-mails.
Some posts are letters.
All emails are telephones.
Conclusions:
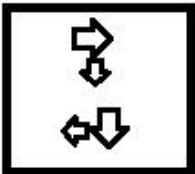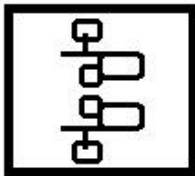I. Some telephones are letters.
II. No email is letter.

**Ans** ✗ A. Both conclusions I and II follow

✔ B. Only Conclusion I follows

✗ C. Only Conclusion II follows

✗ D. Either conclusion I or II follows

Question ID : **1841223497**

**Q.11** If A + B means 'A is the father of B'
A @ B means 'A is the brother of B'
A # B means 'A is the wife of B'

If N + U @ M # C + G @ K, then how is M related to K?

**Ans** ✔ A. Mother

✗ B. Niece

✗ C. Daughter

✗ D. Sister

Question ID : **1841223504**

**Q.12** Three different positions of the same dice are shown, the six faces of which are numbered from 1 to 6. Select the number that will be on the face opposite to the one showing '5'.
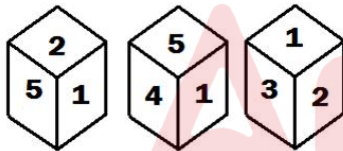
**Ans** ✔ A. 3

✗ B. 2

✗ C. 6

✗ D. 4

Question ID : **1841223512**

**Q.13** Vishal is standing in a park facing the east direction. Then he turns 145 degree anticlockwise. After that he turns 90 degree anticlockwise. Which direction is he facing now?

**Ans** ✔ A. South-west

✗ B. North-west

✗ C. South-east

✗ D. North-east

Question ID : **1841223502**

**Q.14** Sarla is the mother of Kubra. Sankalp is the son of Manoj. Vinay's only son Manoj is Kubra's brother. Yukta's only sister Sarla is married to Vinay. How is Yukta related to Manoj?

Ans ✗ A. Father's mother

✗ B. Father's sister

✗ C. Sister's mother

✔ D. Mother's sister

Question ID : 1841223503

**Q.15** How many numbers are there in the string of elements given below which are immediately preceded by a vowel and are immediately followed by a consonant? (Count from left to right)

4 A 6 D E 3 A 2 U 8 G 6 A S D 4 P3 A 7 A 5 Q 2 E 3 A 4 T 6 E 7 U L 9 5 A 8 N 3 E 5 C 9 7 D 6 E 8 A

Ans ✗ A. 8

✗ B. 7

✗ C. 5

✔ D. 6

Question ID : 1841223500

**Q.16** Select the correct mirror image of the given combination when the mirror is placed at 'PQ' as shown below.



Ans ✗ A.

✗ B.

✔ C.

✗ D.

Question ID : 1841223511

**Q.17** Three of the following four number pairs are alike in some manner and one is different. Identify the one which is different.

Ans ✗ A. 21 : 443

✔ B. 18 : 322

✗ C. 12 : 146

✗ D. 15 : 227

Question ID : 1841223513

**Q.18** Among six friends K, L, M, N, O and P; K scores more marks than P but lesser marks than N. M scores lesser marks than L. O scores the highest marks. Three persons scores more marks than N. Who scores the lowest marks?

**Ans**
✘ A. M

✘ B. L

✘ C. K

✔ D. P

**Q.19** Five persons A, B, C, D and E attend class on one of the five days from Monday to Friday. On each day, one person attends the class. No class is held on Saturday and Sunday. D attends the class on Monday. E attends just after B. C does not attend the class on Tuesday. B is just after A. Who attends the class on Thursday?

**Ans**
✘ A. B

✘ B. A

✘ C. C

✔ D. E

**Q.20** Three of the following four option figures are similar in a certain manner while one is different. Choose the odd one out.

Ans

 ✗ A.

 ✗ B.

 ✗ C.

 ✔ D.

Question ID : **1841223509**

Section : **General Awareness**

**Q.1** Who among the following has been honored with DRDO's "Scientist of the Year Award" in 2020 for his contribution in developing several herbal medicines, including the popular drug Lukoskin meant for the treatment of leukoderma?

Ans ✗ A. Debdeep Mukhopadhyay

✗ B. Saket Saurabh

✗ C. Arun Kumar Shukla

✔ D. Hemant Kumar Pandey

Question ID : **1841223515**

**Q.2** Which of the following features in the Indian constitution was borrowed from the constitution of France?

**Ans** ✗ A. Method of election of President

✗ B. Judicial review

✗ C. Fundamental duties

✓ D. Concept of Republic

Question ID : **1841223533**

**Q.3** In which year the Congress and the Muslim League signed the historic Lucknow Pact and decided to work together for representative government in the country?

**Ans** ✓ A. 1916

✗ B. 1915

✗ C. 1919

✗ D. 1920

Question ID : **1841223523**

**Q.4** Which of the following statements is CORRECT?

**Ans** ✗ A. GPS has four segments.

✗ B. GPS has five segments.

✓ C. GPS has three segments.

✗ D. GPS has two segments.

Question ID : **1841223517**

**Q.5** In which year the American astronaut, Neil Armstrong, landed on the moon for the first time?

**Ans** ✗ A. 1971

✗ B. 1968

✗ C. 1970

✓ D. 1969

Question ID : **1841223532**

**Q.6** Which of the following department / ministry has been allocated ₹18,264.89 crore under the Union Budget 2021-22?

**Ans** ✓ A. The Department of Atomic Energy

✗ B. The Ministry of Earth Sciences

✗ C. The Ministry of Science and Technology

✗ D. The Department of Science and Technology

Question ID : **1841223527**

**Q.7** In which year Timurid ancestry captured Delhi?

Ans   ✗ A. 1378

     ✗ B. 1388

     ✔ C. 1398.

     ✗ D. 1368

Question ID : **1841223522**

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**Q.8** In which month and year Swarnjayanti Gram Swarozgar Yojana (SGSY) launched, aims at bringing the assisted poor families (Swarozgaris) above the poverty line by organizing them into Self Help Groups (SHGs) through a mix of Bank credit and Government subsidy?

Ans   ✗ A. May 2014

     ✗ B. October 1979

     ✗ C. March 1988

     ✔ D. April 1999

Question ID : **1841223519**

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**Q.9** Who founded the Satyashodhak Samaj (Truth Seekers Society), which was devoted to securing human rights and social justice for low-caste people?

Ans   ✗ A. Savitri Bai Phule

     ✗ B. E.V. Ramasami Naickar

     ✗ C. Sri. Narayana Guru

     ✔ D. Jyotirao Govindrao Phule

Question ID : **1841223518**

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**Q.10** Who holds the National record in 100 m race in women's category as of 2021?

Ans   ✗ A. P. T. Usha

     ✔ B. Dutee Chand

     ✗ C. Saraswati Saha

     ✗ D. Hima Das

Question ID : **1841223520**

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**Q.11** In which year Sport Authority of India (SAI) was set up by the Government of India?

Ans   ✗ A. 1980

     ✔ B. 1984

     ✗ C. 1972

     ✗ D. 1976

Question ID : **1841223521**

**Q.12** What is India's rank in coal production in the world as of 2020?

Ans ✔ A. Second

✘ B. Fourth

✘ C. Third

✘ D. Eighth

Question ID : **1841223531**

**Q.13** How many Scheduled Private Sector Banks are in India as of January 2022?

Ans ✘ A. 20

✘ B. 18

✘ C. 24

✔ D. 22

Question ID : **1841223528**

**Q.14** How many parallel ranges are in the longitudinal extent of Himalaya?

Ans ✘ A. Five

✔ B. Three

✘ C. Six

✘ D. Four

Question ID : **1841223529**

**Q.15** In how many phases the Indian National Census 2011 has been conducted?

Ans ✘ A. Three

✘ B. Four

✘ C. One

✔ D. Two

Question ID : **1841223530**

**Q.16** Which of the following Bihu is also known as Rangali Bihu in Assam?

Ans ✘ A. Kati Bihu

✔ B. Bohag Bihu

✘ C. Magh Bihu

✘ D. Kongali Bihu

Question ID : **1841223526**

**Q.17** Which one is an immutable data type in Python?

Ans ✘ A. List

✔ B. Tuple

✘ C. Dictionary

✘ D. Set

Question ID : **1841223516**

**Q.18** In which of the following places the K. M. Music Conservatory located?

Ans ✅ A. Chennai

❌ B. Madurai

❌ C. Kolkata

❌ D. Bengaluru

Question ID : **1841223525**

**Q.19** In which Articles of the Indian constitution the constitutional body, Finance commission is included?

Ans ❌ A. Article 155

✅ B. Article 280

❌ C. Article 98

❌ D. Article 324

Question ID : **1841223534**

**Q.20** Which of the following stupas are located in Sarnath?

Ans ❌ A. Maha and Chakhundi

❌ B. Dhamekh and Shanti

❌ C. Maha and Dhamekh

✅ D. Dhamekh and Chakhundi

Question ID : **1841223524**

Section : **Arithmetic Ability**

**Q.1** Number of students who have opted for subjects English, Mathematics and History are 36, 42 and 54 respectively. The examination is to be conducted for these students such that only the students of the same subject are allowed in one room and the number of students in each room is the same. What is the minimum number of rooms that should be arranged to meet all these conditions?

Ans ❌ A. 18

❌ B. 12

✅ C. 22

❌ D. 6

Question ID : **1841223536**

**Q.2** The cost price of 30 articles is the same as the selling price of $x$ articles. If the profit is 50%, then the value of $x$ is:

Ans ✅ A. 20

❌ B. 30

❌ C. 25

❌ D. 10

Question ID : **1841223541**

**Q.3** Approximately how many hours a day should 40 men work to complete the job in 20 days, if thirty men take 20 days to complete a job working 9 hours a day?

Ans  ✗ A. 5.30 hours

   ✗ B. 6.75 hours

   ✓ C. 8.15 hours

   ✗ D. 9 hours

**Q.4** Akash alone can do a piece of work in 6 days and Bina alone in 8 days. Akash and Bina undertook to do it for ₹6,400. With the help of Dheeraj, they completed the work in 3 days. What is the difference between Akash's payment and Dheeraj's payment?

Ans  ✗ A. ₹2,400

   ✗ B. ₹3,200

   ✗ C. ₹4,000

   ✓ D. ₹2,800

**Q.5** Train A, 800 m long is running at 80 kmph will take how much time to cross a man sitting in another train which is 400 m long, running at 64 kmph in the opposite direction?

Ans  ✗ A. 15 sec

   ✓ B. 25 sec

   ✗ C. 20 sec

   ✗ D. 18 sec

**Q.6** In a mixture of 120 litres, the ratio of milk and water 2 : 1. If this ratio is to be 1 : 2, then the quantity of water to be further added is:

Ans  ✗ A. 80 L

   ✗ B. 100 L

   ✓ C. 120 L

   ✗ D. 60 L

**Q.7** Simplify: $4(10 + 15 \div 5 \times 4 - 2 \times 2) \div (42 \div 2 + 3 \times 3 - 22)$

Ans  ✓ A. 9

   ✗ B. 8.5

   ✗ C. 7

   ✗ D. 8

**Q.8** ABCD is a square of 40 cm. What is the area of the least-sized square that can be inscribed in it with its vertices on the sides of ABCD?

Ans ✗ A. 600 cm$^2$

✗ B. 800 cm$^2$

✔ C. 400 cm$^2$

✗ D. 500 cm$^2$

Question ID : **1841223550**

**Q.9** Three years ago, the average of A, B, and C was 27 years and that of B and C 5 years ago was 20 years. A's age five years later is:

Ans ✗ A. 45

✔ B. 50

✗ C. 40

✗ D. 35

Question ID : **1841223549**

**Q.10** Observe the table and answer the question given below.

| Profit Margin | 2014 | 2015 |
|---|---|---|
| Leather | 10% | 8% |
| Paper | 12% | 10% |
| Pharma | 15% | 12% |
| Technology | 24% | 28% |

What is the year over year percent increase or decrease in the profit?

Ans ✔ A. 3% decrease

✗ B. 5% increase

✗ C. 3% increase

✗ D. 6% increase

Question ID : **1841223552**

**Q.11** A hemispherical bowl of diameter 16 cm is full of ice cream. Each student in a class is served exactly 6 scoops of ice cream. If the hemispherical scoop is having a radius of 2 cm, then ice cream is served to approximately how many students?

Ans ✔ A. 13 students

✗ B. 10 students

✗ C. 12 students

✗ D. 8 students

Question ID : **1841223551**

**Q.12** Observe the table and answer the question given below.

| Profit Margin | 2014 | 2015 |
|---|---|---|
| Leather | 10% | 8% |
| Paper | 12% | 10% |
| Pharma | 15% | 12% |
| Technology | 24% | 28% |

If the cost of leather products and paper to the manufacturer was ₹1,20,000 each was their joint profit% in the year 2014?

Ans ✔ A. 11%

✘ B. 22%

✘ C. 17%

✘ D. 9%

Question ID : **1841223553**

**Q.13** The difference between the place value of the underlined digit in the two numbers 11.3<u>8</u>1 and <u>5</u>3.31 is _____.

Ans ✔ A. 49.92

✘ B. 40.92

✘ C. 42.00

✘ D. 49.20

Question ID : **1841223535**

**Q.14** A vendor bought toffees at 7 for a rupee. How many for a rupee must he sell to gain 40%?

Ans ✘ A. 3

✔ B. 6

✘ C. 5

✘ D. 4

Question ID : **1841223542**

**Q.15** The average of 7 terms is 52 and the 1st term is $\frac{1}{3}$ of the remaining terms. What will be the first number?

Ans ✘ A. 52

✘ B. 24

✔ C. 36

✘ D. 91

Question ID : **1841223548**

**Q.16** The Simple Interest on a sum of money is 16% of the principal, and the rate per annum is equal to the number of years. Find the rate percent.

Ans ✔ A. 4%

✘ B. 8%

✘ C. 5%

✘ D. 6%

Question ID : **1841223543**

**Q.17** Two students A and B appeared at an examination. A secured 9 marks more than B and his marks was 64% of the sum of their marks. The marks obtained by A are: (round off to one decimal place)

**Ans**

✗ A. 11.5

✗ B. 21.5

✔ C. 20.6

✗ D. 19.5

**Q.18** The X axis shows the number of years of Karan's service in a company and the Y axis shows his salary in thousands.

Observe the graph given below and answer based on it.
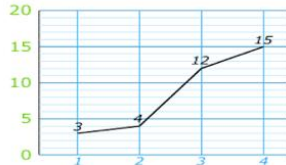


What is the percentage increase in Karan's salary from the first year to the fourth year?

**Ans**

✗ A. 300%

✔ B. 400%

✗ C. 500%

✗ D. 200%

**Q.19** Mr. Mohan invests ₹15,000 for 3 years at 5% p.a. compounded interest reckoned yearly. Income tax at the rate of 20% on the interest earned is deducted at the end of each year. Find the amount he receives at the end of third year. (rounded off to the nearest integer)

**Ans**

✗ A. ₹16,400

✔ B. ₹16,000

✗ C. ₹16,457

✗ D. ₹17,457

**Q.20** What will be the sum when, the largest 4 digit number from 9944, 9900, 9988, 9999 exactly divisible by 88, is added to the smallest 3-digit natural number divisible by 6?

**Ans**

✗ A. 10,064

✗ B. 99,460

✔ C. 10,046

✗ D. 10,406

Section : **General English**

**Q.1** Select the most appropriate option to fill in the blank.

The government will soon _____ the scheme of free ration at the door for the people living below poverty line.

Ans ✗ A. perform

✔ B. implement

✗ C. practice

✗ D. fulfill

Question ID : **1841223569**

**Q.2** Select the most appropriate option to fill in the blank.

I don't know _____ you would like my suggestion. But the _____ is bad and you shouldn't go out at this time of the night.

Ans ✗ A. Weather; weather

✗ B. Weather; whether

✔ C. Whether; weather

✗ D. Whether; whether

Question ID : **1841223561**

**Q.3** Select the most appropriate option to fill in the blank.

The tiger growled _____ at the herd of deer.

Ans ✔ A. ferociously

✗ B. ferociousness

✗ C. ferocious

✗ D. ferocity

Question ID : **1841223556**

**Q.4** Select the most appropriate option to fill in the blank.

The captain _____ the ship only after everybody was safely in the life boat.

Ans ✗ A. was leaving

✔ B. left

✗ C. leaves

✗ D. is leaving

Question ID : **1841223557**

**Q.5** Select the most appropriate meaning of the given idiom.

to eat a humble pie

Ans ✔ A. to admit one's fault

✗ B. to scold someone

✗ C. to get irritated

✗ D. to feel very hungry

Question ID : **1841223563**

**Q.6** Complete the following proverb.

All good things _____.

Ans ✗ A. end fast

✗ B. will eventually end

✗ C. do not last for ever

✓ D. must come to an end

**Q.7** Select the sentence part which has an error in spelling. If there is no error, select 'No error'.

The Board of Directors discussed the balence sheet of the company.

Ans ✗ A. The Board of Directors

✓ B. discussed the balence sheet

✗ C. No error

✗ D. of the company.

**Q.8** Select the sentence which is meaningful and grammatically correct.

Ans ✓ A. Anju takes her dog for a walk every morning.

✗ B. For a walk every morning her dog Anju takes.

✗ C. Anju takes for a walk every morning her dog.

✗ D. Every morning for a walk Anju takes her dog.

**Q.9** Select the most appropriate option to fill in the blank.

Phoolan Devi was a _____ robber of her time.

Ans ✗ A. famous

✓ B. notorious

✗ C. reputable

✗ D. popular

**Q.10** Select the most appropriate option to fill in the blank.

The labourers _____ hard since morning to finish this wall today.

Ans ✓ A. have been working

✗ B. work

✗ C. were working

✗ D. worked

**Q.11** Select the most appropriate synonym of the given word.

**GREGARIUS**

Ans  ❌ A. hostile

❌ B. introvert

✅ C. sociable

❌ D. reserved

Question ID : **1841223560**

**Q.12** Select the most appropriate idiom to fill in the blank.

**My parent and I do not _____ regarding my love for music.**

Ans  ❌ A. pass the buck

❌ B. hit the roof

✅ C. see eye to eye

❌ D. raise an eyebrow

Question ID : **1841223564**

**Q.13** Select the sentence part which has an error in spelling. If there is no error, select 'No error'.

**The saint told the soljiers that their king was in the garden.**

Ans  ✅ A. the soljiers that their king

❌ B. The saint told

❌ C. No error

❌ D. was in the garden

Question ID : **1841223565**

**Q.14** Select the most appropriate option to fill in the blank.

**Please refrain _____ drinking coffee for a week.**

Ans  ❌ A. of

✅ B. from

❌ C. for

❌ D. with

Question ID : **1841223555**

**Q.15** Select the most appropriate synonym of the given word.

**TRANQUIL**

Ans  ✅ A. peaceful

❌ B. nervous

❌ C. stormy

❌ D. excited

Question ID : **1841223559**

**Comprehension:**

Read the following passage and answer the questions given after it.

Ötzi's discovery ranks as one of the greatest archaeological finds of the 20th century. Ötzi the Iceman is the well-preserved, 5,300-year-old mummy that caused an international sensation when it was dug out of a glacier high in the Italian Alps in 1991.
Since that time, the naturally mummified individual - whom the press named Ötzi because he was found in the mountains above the Ötztal Valley - has continued to attract intense public interest and professional scrutiny as the man's mummified remains, the clothes he wore and the implements he carried have been studied over the past few decades.
"He is so important because, for the first time, we have the possibility of knowing a Copper Age individual who died in the same situation as he had lived," said Katharina Hersel, a spokesperson for the South Tyrol Museum of Archaeology in Bolzano, Italy, where Ötzi is housed.
Ötzi the Iceman was found by two German hikers who were making their way across the Tisenjoch Pass at an elevation of 10,530 feet (3,210 meters) above the Ötztal Valley in western Austria in September 1991. The hikers were skirting a glacier on the border of Austria and Italy when they noticed the upper part of a human body protruding from the ice. That summer had been particularly warm, Hersel said, and the high temperatures aided in exposing Ötzi's remains. The German hikers alerted the Austrian authorities, who, at first, thought the body was the victim of an unfortunate mountaineering accident. This assumption prompted a hasty attempt to extract the body from the ice the following day. The rescuers, none of them trained archaeologists, tried to dig Ötzi out of the ice using axes and jackhammers. In the process, parts of the mummy -including the left hip and thigh and a few of his tools, including his bow - were damaged. Bad weather scuttled this first attempt to free the body from the ice, so the authorities tried again the next day. The rescue attempt took longer than anticipated, but five days after Ötzi's discovery, the mummy was freed from the ice and fully exposed.
A helicopter carried the mummy off the mountain, and the iceman was transported to the Institute of Forensic Medicine at Innsbruck Medical University in Austria. There, Konrad Spindler, an archaeologist at the University of Innsbruck, examined the remains and announced that the mummy was not a mountaineer but was "at least 4,000 years old," Scientific American reported.

**SubQuestion No : 16**

**Q.16 The central theme of the passage is:**

Ans    ✗ A. mummification of Otzi, the Iceman

     ✗ B. importance of Otzi, the Iceman

     ✔ C. discovery of Otzi, the Iceman

     ✗ D. preservation of Otzi, the Iceman

Question ID : **1841223571**

**Comprehension:**

Read the following passage and answer the questions given after it.

Ötzi's discovery ranks as one of the greatest archaeological finds of the 20th century. Ötzi the Iceman is the well-preserved, 5,300-year-old mummy that caused an international sensation when it was dug out of a glacier high in the Italian Alps in 1991.
Since that time, the naturally mummified individual - whom the press named Ötzi because he was found in the mountains above the Ötztal Valley - has continued to attract intense public interest and professional scrutiny as the man's mummified remains, the clothes he wore and the implements he carried have been studied over the past few decades.
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A helicopter carried the mummy off the mountain, and the iceman was transported to the Institute of Forensic Medicine at Innsbruck Medical University in Austria. There, Konrad Spindler, an archaeologist at the University of Innsbruck, examined the remains and announced that the mummy was not a mountaineer but was "at least 4,000 years old," Scientific American reported.

**SubQuestion No : 17**

Q.17 The finding of Otzi is archeologically important because:

a. The body is well preserved.
b. It is a naturally mummified individual.
c. It is 5,300 years old.
d. It was found at an elevation of 10,530 feet.

Which of the above reasons are correct?

Ans ✓ A. a, b and c

✗ B. a, b and d

✗ C. a, c and d

✗ D. b, c and d

Question ID : 1841223572

**Comprehension:**

Read the following passage and answer the questions given after it.

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Since that time, the naturally mummified individual - whom the press named Ötzi because he was found in the mountains above the Ötztal Valley - has continued to attract intense public interest and professional scrutiny as the man's mummified remains, the clothes he wore and the implements he carried have been studied over the past few decades.
"He is so important because, for the first time, we have the possibility of knowing a Copper Age individual who died in the same situation as he had lived," said Katharina Hersel, a spokesperson for the South Tyrol Museum of Archaeology in Bolzano, Italy, where Ötzi is housed.
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A helicopter carried the mummy off the mountain, and the iceman was transported to the Institute of Forensic Medicine at Innsbruck Medical University in Austria. There, Konrad Spindler, an archaeologist at the University of Innsbruck, examined the remains and announced that the mummy was not a mountaineer but was "at least 4,000 years old," Scientific American reported.

**SubQuestion No : 18**

**Q.18 The body of Otzi and his tools were damaged mainly because:**

Ans   ✗ A. the bad weather caused delay in extracting the body

    ✗ B. he had been a victim of an accident

    ✔ C. the untrained rescuers used jackhammers and axes

    ✗ D. the hikers tried to extract him out of the ice

Question ID : **1841223574**

**Comprehension:**

Read the following passage and answer the questions given after it.

Ötzi's discovery ranks as one of the greatest archaeological finds of the 20th century. Ötzi the Iceman is the well-preserved, 5,300-year-old mummy that caused an international sensation when it was dug out of a glacier high in the Italian Alps in 1991.

Since that time, the naturally mummified individual - whom the press named Ötzi because he was found in the mountains above the Ötztal Valley - has continued to attract intense public interest and professional scrutiny as the man's mummified remains, the clothes he wore and the implements he carried have been studied over the past few decades.

"He is so important because, for the first time, we have the possibility of knowing a Copper Age individual who died in the same situation as he had lived," said Katharina Hersel, a spokesperson for the South Tyrol Museum of Archaeology in Bolzano, Italy, where Ötzi is housed.

Ötzi the Iceman was found by two German hikers who were making their way across the Tisenjoch Pass at an elevation of 10,530 feet (3,210 meters) above the Ötztal Valley in western Austria in September 1991. The hikers were skirting a glacier on the border of Austria and Italy when they noticed the upper part of a human body protruding from the ice. That summer had been particularly warm, Hersel said, and the high temperatures aided in exposing Ötzi's remains. The German hikers alerted the Austrian authorities, who, at first, thought the body was the victim of an unfortunate mountaineering accident. This assumption prompted a hasty attempt to extract the body from the ice the following day. The rescuers, none of them trained archaeologists, tried to dig Ötzi out of the ice using axes and jackhammers. In the process, parts of the mummy -including the left hip and thigh and a few of his tools, including his bow - were damaged. Bad weather scuttled this first attempt to free the body from the ice, so the authorities tried again the next day. The rescue attempt took longer than anticipated, but five days after Ötzi's discovery, the mummy was freed from the ice and fully exposed.

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**SubQuestion No : 19**

**Q.19 Which of the following statements is NOT true according to the passage?**

Ans    ✗ A. Otzi's mummified remains, the clothes he wore and the implements he carried have been studied by archaeologists.

    ✗ B. Otzi is important because the archeologists have a chance to study an individual who died in the same situation as he had lived.

    ✗ C. Otzi was found buried in a glacier on the Italian Alps.

    ✔ D. Otzi, the Iceman belonged to the bronze age.

Question ID : 1841223575

**Comprehension:**

Read the following passage and answer the questions given after it.

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**SubQuestion No : 20**

**Q.20 The hikers who found Otzi were:**

Ans    ✖ A. Austrians

      ✖ B. Americans

      ✔ C. Germans

      ✖ D. Italians

Question ID : **1841223573**

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Section : **General Hindi**

**Q.1 निम्न वाक्यों में से संयुक्त वाक्य है-**

Ans    ✖ A. रात के बारह बजे मैंने पढ़ना बंद कर दिया।

      ✔ B. अकाल पड़ेगा और लोग मरेंगे।

      ✖ C. मुझे अप्रिय सत्य बोलना उचित नहीं।

      ✖ D. मैंने एक व्यक्ति को देखा जो बहुत दुबला-पतला था।

Question ID : **1841223587**

**Q.2** 'कुल' शब्द उदाहरण है-

Ans    ✗ A. समयवाचक क्रिया विशेषण का

      ✗ B. स्थानवाचक क्रिया विशेषण का

      ✓ C. परिमाण वाचक क्रिया विशेषण का

      ✗ D. रीतिवाचक क्रिया विशेषण का

Question ID : **1841223577**

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**Q.3** उचित शब्द से वाक्य पूर्ण कीजिए-

अर्जुन _____ निशानेबाज़ वीर था।

Ans    ✗ A. अतुलनीय

      ✓ B. अद्वितीय

      ✗ C. एकमात्र

      ✗ D. अनुपम

Question ID : **1841223589**

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**Q.4** निम्न में से किस संज्ञा शब्द में 'मान' प्रत्यय जोड़कर विशेषण शब्द बनेगा-

Ans    ✓ A. शक्ति

      ✗ B. धर्म

      ✗ C. बल

      ✗ D. भूगोल

Question ID : **1841223576**

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**Q.5** 'अत्यूष्म' में है-

Ans    ✗ A. दीर्घ संधि

      ✗ B. अयादि संधि

      ✗ C. गुण संधि

      ✓ D. यण् संधि

Question ID : **1841223578**

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**Q.6** 'पंचम' का संधि विच्छेद है-

Ans    ✗ A. पन + चम

      ✗ B. पंच + म

      ✗ C. पंच + अम

      ✓ D. पम् + चम

Question ID : **1841223579**

**Q.7** उचित विकल्प का चयन कर वाक्य को पूर्ण करें-

अमीना को वाद्यसंगीत से _____ है।

Ans    ✅ A. अनुराग

     ❌ B. स्नेह

     ❌ C. आसक्ति

     ❌ D. प्रेम

Question ID : **1841223590**

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**Q.8** उचित मुहावरे से वाक्य पूर्ण कीजिए-

सलीम, इक़बाल की तरक़्क़ी देखते ही _____ लगा।

Ans    ❌ A. अँगूठा दिखाने

     ✅ B. अंगारों पर लोटने

     ❌ C. अँचरा पसारने

     ❌ D. अंगारों पर पैर रखने

Question ID : **1841223584**

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**Q.9** 'कोई दम भर का मेहमान होना' मुहावरे का अर्थ है-

Ans    ❌ A. दबाव में होना

     ✅ B. मरने के समीप होना

     ❌ C. थोड़ी देर के लिए आना

     ❌ D. शत्रु के घर जाना

Question ID : **1841223583**

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**Q.10** निम्न में से 'विष्णु' का पर्याय नहीं है-

Ans    ❌ A. विभु

     ✅ B. लोकेश

     ❌ C. माधव

     ❌ D. केशव

Question ID : **1841223581**

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**Q.11** 'अनिल जी तन-मन से भूगोल पढ़ा रहे हैं।' वाक्य उदाहरण है-

Ans    ❌ A. संदिग्ध वर्तमान का

     ❌ B. सम्भाव्य वर्तमान का

     ❌ C. सामान्य वर्तमान का

     ✅ D. तात्कालिक वर्तमान का

Question ID : **1841223585**

**Q.12 वाक्य विन्यास की दृष्टि से अशुद्ध वाक्य है-**

Ans ❌ A. घर धन-धान्य से भरा था।

✅ B. कोई भी ऐसा नहीं दृष्टिगोचर होता।

❌ C. काशी विश्वविद्यालय के चार लड़के पकड़े गए।

❌ D. माता-पिता की सेवा बच्चों का कर्त्तव्य है।

Question ID : **1841223588**

**Q.13 निम्न में से 'सुशील' का विलोम शब्द है-**

Ans ❌ A. अश्लील

✅ B. दुःशील

❌ C. उग्र

❌ D. अवशील

Question ID : **1841223580**

**Q.14 निम्न में से कौन- सा विलोम युग्म सुमेलित नहीं है-**

Ans ❌ A. सन्तोष - असंतोष

❌ B. स्तुति - निंदा

❌ C. सामान्य - विशिष्ट

✅ D. सम्पद - द्रुपद

Question ID : **1841223582**

**Q.15 'कोई स्त्री रोज़ ही इतनी रात को घर आए तो लोग उसे कुलटा कहने लग जाए।'**

Ans ✅ A. हेतुहेतुमद् भविष्य

❌ B. संदिग्ध वर्तमान

❌ C. सम्भाव्य भविष्य

❌ D. सामान्य भविष्य

Question ID : **1841223586**

**Comprehension:**

दिए गए गद्यांश के आधार पर प्रश्न के उत्तर दीजिए-

राजा शशांक की मृत्यु के बाद बंगाल में लगभग एक शताब्दी तक बड़ी अराजकतापूर्ण स्थिति व्याप्त रही। शक्तिशाली केंद्रीय सत्ता के अभाव में अराजकतापूर्ण स्थिति से तंग आकर लोगों ने आठवीं शताब्दी के मध्य में गोपाल नामक किसी व्यक्ति को अपना शासक चुना, जो बंगाल के प्रसिद्ध पाल वंश का संस्थापक बना। उत्तर भारत में इस समय जहाँ शक्तिशाली राजवंशों का नितांत अभाव था वहीं इसके विपरीत दक्षिण भारत में प्रतापी राजवंशों का उदय इसी युग से प्रारंभ हुआ। 733 ई. में दांतिदुर्ग ने राष्ट्रकूट साम्राज्य का स्थापना की। आठवीं शताब्दी के प्रारंभ में कन्नौज पर नितांत शक्तिहीन आयुध शासकों का शासन था। इसके विपरीत पाल, प्रतिहार और राष्ट्रकूट उनकी शक्तिहीनता का लाभ उठाकर कन्नौज पर अपना आधिपत्य अथापित करना चाहते थे। कन्नौज पर आधिपत्य के लिए इन तीनों महाशक्तियों के मध्य संघर्ष को 'त्रिपक्षीय संघर्ष' कहा जाता है। यह संघर्ष बड़ी विचित्र एवं रोचक स्थितियों में लगभग एक शताब्दी तक चलता रहा और अंतत: गुर्जर-प्रतिहार कन्नौज पर आधिपत्य स्थापित करने में सफल हुए। इस त्रिपक्षीय संघर्ष का कारण कन्नौज नगर पर अधिकार करने की आकांक्षा मात्र नहीं था। कन्नौज वास्तव में इन तीनों महाशक्तियों की महत्त्वाकांक्षाओं का क्रीड़ा - स्थल था। कन्नौज कूटनीतिक और सामरिक दृष्टि से अब वहीं महत्त्व रखता था को मगध साम्राज्य में पाटलिपुत्र का था। कन्नौज अब उत्तर भारत की राजनीतिक धुरी का प्रतीक था। अत: समकालीन राजनीतिक महा शक्तियों द्वारा कन्नौज पर प्रभुत्व स्थापित करने की लालसा बड़ी स्वाभाविक थी।

**SubQuestion No : 16**

**Q.16 आठवीं शताब्दी के कन्नौज के विषय में सत्य नहीं है-**

Ans   ✗ A. कन्नौज लगभग एक शताब्दी तक त्रिपक्षीय संघर्ष का कारण बना रहा।

    ✗ B. आठवीं शताब्दी में कन्नौज भारत की राजनीतिक धुरी का प्रतीक था।

    ✗ C. वह तीन महाशक्तियों की महत्त्वाकांक्षा का क्रीड़ा-स्थल बन गया था।

    ✓ D. इस युग में कन्नौज का वही महत्त्व था जो मगध साम्राज्य में प्रयाग का था।

Question ID : 1841223596

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**Comprehension:**

दिए गए गद्यांश के आधार पर प्रश्न के उत्तर दीजिए-

राजा शशांक की मृत्यु के बाद बंगाल में लगभग एक शताब्दी तक बड़ी अराजकतापूर्ण स्थिति व्याप्त रही। शक्तिशाली केंद्रीय सत्ता के अभाव में अराजकतापूर्ण स्थिति से तंग आकर लोगों ने आठवीं शताब्दी के मध्य में गोपाल नामक किसी व्यक्ति को अपना शासक चुना, जो बंगाल के प्रसिद्ध पाल वंश का संस्थापक बना। उत्तर भारत में इस समय जहाँ शक्तिशाली राजवंशों का नितांत अभाव था वहीं इसके विपरीत दक्षिण भारत में प्रतापी राजवंशों का उदय इसी युग से प्रारंभ हुआ। 733 ई. में दांतिदुर्ग ने राष्ट्रकूट साम्राज्य का स्थापना की। आठवीं शताब्दी के प्रारंभ में कन्नौज पर नितांत शक्तिहीन आयुध शासकों का शासन था। इसके विपरीत पाल, प्रतिहार और राष्ट्रकूट उनकी शक्तिहीनता का लाभ उठाकर कन्नौज पर अपना आधिपत्य अथापित करना चाहते थे। कन्नौज पर आधिपत्य के लिए इन तीनों महाशक्तियों के मध्य संघर्ष को 'त्रिपक्षीय संघर्ष' कहा जाता है। यह संघर्ष बड़ी विचित्र एवं रोचक स्थितियों में लगभग एक शताब्दी तक चलता रहा और अंतत: गुर्जर-प्रतिहार कन्नौज पर आधिपत्य स्थापित करने में सफल हुए। इस त्रिपक्षीय संघर्ष का कारण कन्नौज नगर पर अधिकार करने की आकांक्षा मात्र नहीं था। कन्नौज वास्तव में इन तीनों महाशक्तियों की महत्त्वाकांक्षाओं का क्रीड़ा - स्थल था। कन्नौज कूटनीतिक और सामरिक दृष्टि से अब वहीं महत्त्व रखता था को मगध साम्राज्य में पाटलिपुत्र का था। कन्नौज अब उत्तर भारत की राजनीतिक धुरी का प्रतीक था। अत: समकालीन राजनीतिक महा शक्तियों द्वारा कन्नौज पर प्रभुत्व स्थापित करने की लालसा बड़ी स्वाभाविक थी।

**SubQuestion No : 17**

**Q.17 'सामरिक' का अर्थ है-**

Ans   ✗ A. संस्कृति से संबंधित

    ✗ B. अर्थ से संबंधित

    ✓ C. युद्ध से संबंधित

    ✗ D. समाज से संबंधित

Question ID : 1841223592

**Comprehension:**

दिए गए गद्यांश के आधार पर प्रश्न के उत्तर दीजिए-

राजा शशांक की मृत्यु के बाद बंगाल में लगभग एक शताब्दी तक बड़ी अराजकतापूर्ण स्थिति व्याप्त रही। शक्तिशाली केंद्रीय सत्ता के अभाव में अराजकतापूर्ण स्थिति से तंग आकर लोगों ने आठवीं शताब्दी के मध्य में गोपाल नामक किसी व्यक्ति को अपना शासक चुना, जो बंगाल के प्रसिद्ध पाल वंश का संस्थापक बना। उत्तर भारत में इस समय जहाँ शक्तिशाली राजवंशों का नितांत अभाव था वहीं इसके विपरीत दक्षिण भारत में प्रतापी राजवंशों का उदय इसी युग से प्रारंभ हुआ। 733 ई. में दांतिदुर्ग ने राष्ट्रकूट साम्राज्य का स्थापना की। आठवीं शताब्दी के प्रारंभ में कन्नौज पर नितांत शक्तिहीन आयुध शासकों का शासन था। इसके विपरीत पाल, प्रतिहार और राष्ट्रकूट उनकी शक्तिहीनता का लाभ उठाकर कन्नौज पर अपना आधिपत्य अथापित करना चाहते थे। कन्नौज पर आधिपत्य के लिए इन तीनों महाशक्तियों के मध्य संघर्ष को 'त्रिपक्षीय संघर्ष' कहा जाता है। यह संघर्ष बड़ी विचित्र एवं रोचक स्थितियों में लगभग एक शताब्दी तक चलता रहा और अंतत: गुर्जर-प्रतिहार कन्नौज पर आधिपत्य स्थापित करने में सफल हुए। इस त्रिपक्षीय संघर्ष का कारण कन्नौज नगर पर अधिकार करने की आकांक्षा मात्र नहीं था। कन्नौज वास्तव में इन तीनों महाशक्तियों की महत्त्वाकांक्षाओं का क्रीड़ा-स्थल था। कन्नौज कूटनीतिक और सामरिक दृष्टि से अब वहीं महत्त्व रखता था को मगध साम्राज्य में पाटलिपुत्र का था। कन्नौज अब उत्तर भारत की राजनीतिक धुरी का प्रतीक था। अत: समकालीन राजनीतिक महा शक्तियों द्वारा कन्नौज पर प्रभुत्व स्थापित करने की लालसा बड़ी स्वाभाविक थी।

**SubQuestion No : 18**

**Q.18** आठवीं शताब्दी के आरम्भ में कन्नौज के शासक थे-

Ans   ✅ A. आयुध

     ❌ B. पाल

     ❌ C. प्रतिहार

     ❌ D. राष्ट्रकूट

Question ID : **1841223593**

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**Comprehension:**

दिए गए गद्यांश के आधार पर प्रश्न के उत्तर दीजिए-

राजा शशांक की मृत्यु के बाद बंगाल में लगभग एक शताब्दी तक बड़ी अराजकतापूर्ण स्थिति व्याप्त रही। शक्तिशाली केंद्रीय सत्ता के अभाव में अराजकतापूर्ण स्थिति से तंग आकर लोगों ने आठवीं शताब्दी के मध्य में गोपाल नामक किसी व्यक्ति को अपना शासक चुना, जो बंगाल के प्रसिद्ध पाल वंश का संस्थापक बना। उत्तर भारत में इस समय जहाँ शक्तिशाली राजवंशों का नितांत अभाव था वहीं इसके विपरीत दक्षिण भारत में प्रतापी राजवंशों का उदय इसी युग से प्रारंभ हुआ। 733 ई. में दांतिदुर्ग ने राष्ट्रकूट साम्राज्य का स्थापना की। आठवीं शताब्दी के प्रारंभ में कन्नौज पर नितांत शक्तिहीन आयुध शासकों का शासन था। इसके विपरीत पाल, प्रतिहार और राष्ट्रकूट उनकी शक्तिहीनता का लाभ उठाकर कन्नौज पर अपना आधिपत्य अथापित करना चाहते थे। कन्नौज पर आधिपत्य के लिए इन तीनों महाशक्तियों के मध्य संघर्ष को 'त्रिपक्षीय संघर्ष' कहा जाता है। यह संघर्ष बड़ी विचित्र एवं रोचक स्थितियों में लगभग एक शताब्दी तक चलता रहा और अंतत: गुर्जर-प्रतिहार कन्नौज पर आधिपत्य स्थापित करने में सफल हुए। इस त्रिपक्षीय संघर्ष का कारण कन्नौज नगर पर अधिकार करने की आकांक्षा मात्र नहीं था। कन्नौज वास्तव में इन तीनों महाशक्तियों की महत्त्वाकांक्षाओं का क्रीड़ा-स्थल था। कन्नौज कूटनीतिक और सामरिक दृष्टि से अब वहीं महत्त्व रखता था को मगध साम्राज्य में पाटलिपुत्र का था। कन्नौज अब उत्तर भारत की राजनीतिक धुरी का प्रतीक था। अत: समकालीन राजनीतिक महा शक्तियों द्वारा कन्नौज पर प्रभुत्व स्थापित करने की लालसा बड़ी स्वाभाविक थी।

**SubQuestion No : 19**

**Q.19** त्रिपक्षीय संघर्ष के विषय में असत्य है-

Ans   ❌ A. यह संघर्ष कन्नौज पर आधिपत्य को लेकर हुआ।

     ❌ B. यह त्रिपक्षीय संघर्ष लगभग एक शताब्दी तक चलता रहा।

     ✅ C. पाल, प्रतिहार और चालुक्य वंशों के मध्य यह संघर्ष हुआ।

     ❌ D. प्रतिहारों द्वारा कन्नौज पर विजय प्राप्त करने से यह संघर्ष समाप्त हुआ।

Question ID : **1841223595**

**Comprehension:**

दिए गए गद्यांश के आधार पर प्रश्न के उत्तर दीजिए-

राजा शशांक की मृत्यु के बाद बंगाल में लगभग एक शताब्दी तक बड़ी अराजकतापूर्ण स्थिति व्याप्त रही। शक्तिशाली केंद्रीय सत्ता के अभाव में अराजकतापूर्ण स्थिति से तंग आकर लोगों ने आठवीं शताब्दी के मध्य में गोपाल नामक किसी व्यक्ति को अपना शासक चुना, जो बंगाल के प्रसिद्ध पाल वंश का संस्थापक बना। उत्तर भारत में इस समय जहाँ शक्तिशाली राजवंशों का नितांत अभाव था वहीं इसके विपरीत दक्षिण भारत में प्रतापी राजवंशों का उदय इसी युग से प्रारंभ हुआ। 733 ई. में दांतिदुर्ग ने राष्ट्रकूट साम्राज्य का स्थापना की। आठवीं शताब्दी के प्रारंभ में कन्नौज पर नितांत शक्तिहीन आयुध शासकों का शासन था। इसके विपरीत पाल, प्रतिहार और राष्ट्रकूट उनकी शक्तिहीनता का लाभ उठाकर कन्नौज पर अपना आधिपत्य अधापित करना चाहते थे। कन्नौज पर आधिपत्य के लिए इन तीनों महाशक्तियों के मध्य संघर्ष को 'त्रिपक्षीय संघर्ष' कहा जाता है। यह संघर्ष बड़ी विचित्र एवं रोचक स्थितियों में लगभग एक शताब्दी तक चलता रहा और अंतत: गुर्जर-प्रतिहार कन्नौज पर आधिपत्य स्थापित करने में सफल हुए। इस त्रिपक्षीय संघर्ष का कारण कन्नौज नगर पर अधिकार करने की आकांक्षा मात्र नहीं था। कन्नौज वास्तव में इन तीनों महाशक्तियों की महत्त्वाकांक्षाओं का क्रीड़ा-स्थल था। कन्नौज कूटनीतिक और सामरिक दृष्टि से अब वहीं महत्त्व रखता था को मगध साम्राज्य में पाटलिपुत्र का था। कन्नौज अब उत्तर भारत की राजनीतिक धुरी का प्रतीक था। अत: समकालीन राजनीतिक महा शक्तियों द्वारा कन्नौज पर प्रभुत्व स्थापित करने की लालसा बड़ी स्वाभाविक थी।

**SubQuestion No : 20**

**Q.20 निम्न में से जनता द्वारा चुना हुआ शासक था-**

Ans   ✅ A. गोपाल

   ❌ B. हर्ष

   ❌ C. दांतिदुर्ग

   ❌ D. शशांक

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Section : **Discipline 1**

**Q.1** Calculate the angle between the lines, $m - \sqrt{3}n - 5 = 0$ and $\sqrt{3}m - n + 6 = 0$.

Ans   ✅ A. 30

   ❌ B. 60

   ❌ C. 50

   ❌ D. 45

**Q.2** Consider the below statements with respect to "Resistance of common types of Earth electrodes" and Identify the correct answer.

Statement A: A plate has a much lower resistance than a pipe, rod or strip of equal surface area.
Statement B: For higher current density requirements plate earthing may be preferred over pipe/rod earthing.

Ans   ❌ A. Statement A is correct and B is incorrect

   ❌ B. Both satements are correct

   ❌ C. Both statements are incorrect

   ✅ D. Statement B is correct and A is incorrect

**Q.3** Two solutions of a substance (non electrolyte) with a different values of molarity (M) are mixed, volume of first solution is 300 mL with 1.2 M and volume of second solution is 500 mL, Calculate the molarity of second solution if the molarity of final mixture is 1.5?

**Ans** ✗ A. 0.79 M

✗ B. 1.95 M

✓ C. 1.68 M

✗ D. 2.42 M

Question ID : **1841223599**

**Q.4** Solubility of atmospheric oxygen in fresh water ranges from _____ at 0° C to about _____ at 35° C under 1 atmosperic pressure-measured in DO meter.

**Ans** ✗ A. 3 mg/l, 6.5 mg/l

✗ B. 1 mg/l, 5 mg/l

✓ C. 14.6 mg/l, 7 mg/l

✗ D. 25 mg/l, 15.5 mg/l

Question ID : **1841223600**

**Q.5** Consider the below statements with respect to work and power and identify correct answer.

Statement A: The SI unit of work is Joule(J).
Statement B: Power doesnot depend on time.

**Ans** ✓ A. Statement A is correct and B is incorrect

✗ B. Both satements are correct

✗ C. Both statements are incorrect

✗ D. Statement B is correct and A is incorrect

Question ID : **1841223610**

**Q.6** Consider the below statements with respect to analysis of coplanar non concurrent force system and Identify the correct answer.

Statement A: If the resultant force of a force system is directed upwards and truly vertical, then the net effect of force system in horizontal direction is equal to zero.
Statement B: If the resultant force of a force system is truly vertical, then the net effect of force system in vertical direction is equal to magnitude of resultant force.

**Ans** ✗ A. Both statements are incorrect

✓ B. Both satements are correct

✗ C. Statement A is correct and B is incorrect

✗ D. Statement B is correct and A is incorrect

Question ID : **1841223605**

**Q.7** As per IS 10500 : 2012, maximum acceptable limit for the total dissolved solids present in drinking water is _____.

**Ans** ✔ A. 500 mg/l

✘ B. 100 mg/l

✘ C. 750 mg/l

✘ D. 250 mg/l

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**Q.8** Two concurrent forces are acting at a point are shown in figure. If the resultant of these two forces is 1216.55 N, calculate the net effect of shown forces in vertical direction. Take the direction of 600 N is truely vertical and $\theta$ is $60°$.
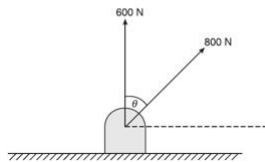


**Ans** ✘ A. 600 N

✘ B. 1121.62 N

✘ C. 800 N

✔ D. 1000 N

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**Q.9** Which of the following theorem states that "a linear two-terminal circuit can be replaced by an equivalent circuit consisting of a voltage source $V_{TH}$ in series with a resistor $R_{TH}$", where $V_{TH}$ is the open circuit voltage at the terminals and $R_{TH}$ is the input or equivalent resistance at the terminals, when the independent sources are turned off

**Ans** ✘ A. Norton's Theorem

✘ B. Superposition Theorem

✔ C. Thevenin's Theorem

✘ D. Maximum Power Transfer Theorem

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**Q.10** Schematic representation of Lee's apparatus used to determine thermal conductivity of a material is shown in below figure, identify the experimental specimen used in this experiment.
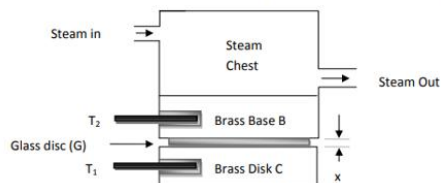


**Ans** ✘ A. Brass Base B

✘ B. Brass Disk C

✔ C. Glass disc (G)

✘ D. Steam

**Q.11** Consider the below statements with respect to "Power transmission devices used to transmit power from one shaft to another" and Identify the correct answer.

Statement A: Belt drives are used where exact velocity ratio is not required.
Statement B: The chain drive is considered as positive drive as no slip is observed during power transmission.

Ans ✗ A. Both statements are incorrect

✗ B. Statement B is correct and A is incorrect

✓ C. Both satements are correct

✗ D. Statement A is correct and B is incorrect

Question ID : **1841223615**

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**Q.12** Consider the below statements with respect to dry corrosion of metals and identify correct answer.

Statement A: Dry corrosion occurs usually in the presence of gases and vapours
Statement B: Dry corrosion occurs mainly at high temperatures in the absence of moisture.

Ans ✗ A. Both statements are incorrect

✓ B. Both satements are correct

✗ C. Statement B is correct and A is incorrect

✗ D. Statement A is correct and B is incorrect

Question ID : **1841223602**

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**Q.13** Consider the below statements with respect to 'Ohm law applicable for conductors' and Identify the correct answer.

Statement A: It does not hold true for nonlinear devises such as semiconductors and zener diodes.
Statement B: It is not applicable to non metallic conductors, such a silicon carbide.

Ans ✓ A. Both satements are correct

✗ B. Statement A is correct and B is incorrect

✗ C. Statement B is correct and A is incorrect

✗ D. Both statements are incorrect

Question ID : **1841223612**

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**Q.14** Coulomb's law states that:

Ans ✗ A. the force of attraction or repulsion acting along a straight line between two electric charges is directly proportional to the sum of the charges and inversely to the distance between them.

✓ B. the force of attraction or repulsion acting along a straight line between two electric charges is directly proportional to the product of the charges and inversely to the square of the distance between them.

✗ C. the force of attraction or repulsion acting along a straight line between two electric charges is directly proportional to the square of the product of charges and inversely to the distance between them.

✗ D. the force of attraction or repulsion acting along a straight line between two electric charges is inversely proportional to the product of the charges and directly to the square of the distance between them.

Question ID : **1841223597**

**Q.15** A block of weight 600 N resting on a horizontal surface is subjected to a horizontal push of 300 N force, calculate the friction force developed at the contact surface, if the coefficient of friction between two materials is 0.3.

Ans
✗ A. 210 N

✔ B. 180 N

✗ C. 90 N

✗ D. 250 N

Question ID : **1841223611**

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**Q.16** Identify the incorrect statement with respect to classification of boilers according to location of furnace.

Ans
✗ A. Option boiler is a internally fired boiler

✔ B. Lancashire boiler is a externally fired boiler

✗ C. Cornish boiler is a internally fired boiler

✗ D. Bobcock and Wilcox boilers are externally fired boilers

Question ID : **1841223616**

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**Q.17** Rectilinear motion of a particle is defined by the relation $x = 2t^3 - 3t^2 + 10t - 5$. Calculate the acceleration when time $(t) = 3$ sec. consider that value '$x$' is measure in meters.

Ans
✔ A. 30 m/sec

✗ B. 14 m/sec

✗ C. 52 m/sec

✗ D. 46 m/sec

Question ID : **1841223608**

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**Q.18** A rectangular lamina having base width $AB = 5$ mm and depth $BC = 10$ mm is as shown in below figure. Calculate its moment of inertia about its base $AB$.
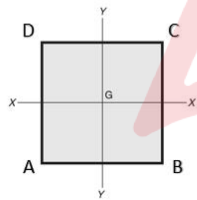


Ans
✗ A. 1244.88 mm$^4$

✗ B. 956.78 mm$^4$

✗ C. 1834.77 mm$^4$

✔ D. 1666.66 mm$^4$

Question ID : **1841223607**

**Q.19** Which of the following is the correct expression for the calculation of centrifugal force (F) experienced by an object during its curvilinear motion.
Where, w = Weight of revolving object, v = velocity at radius 'r' on body, g = acceleration due to gravity, r = perpendicular distance from axis of rotation to centre of gravity of revolving object.

**Ans**

✗ A. $F = \dfrac{v^2}{gr}$

✗ B. $F = \dfrac{wv}{gr^2}$

✔ C. $F = \dfrac{wv^2}{gr}$

✗ D. $F = \dfrac{wv^2}{gr^2}$

**Q.20** A triangular lamina with base width $b = 30$ mm and height $h = 50$ mm is as shown in below figure. The location of centroid measured with respect to its apex is at a distance of _____mm.
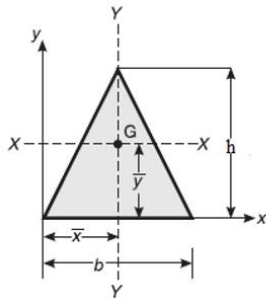


**Ans**

✗ A. 41.32 mm

✗ B. 25.00 mm

✗ C. 16.66 mm

✔ D. 33.33 mm

Section : **Discipline 2**

**Q.1** Arbitrary value given by Slitcher for Radius of influence for Unconfined aquifer is:

**Ans**

✗ A. 75 m

✗ B. 600 m

✔ C. 150 m

✗ D. 300 m

**Q.2** The vacuum gauge connected to the chamber measures a reading of 60 kPa and atmospheric pressure at that point is 150 kPa, The absolute pressure of chamber is _____.

**Ans** ✗ A. 60 kPa

✓ B. 210 kPa

✗ C. 150 kPa

✗ D. 90 kPa

Question ID : **1841223629**

**Q.3** Which of the following is not the product of hydration of ordinary Portland cement?

**Ans** ✗ A. Tetracalcium Aluminoferrite

✓ B. Calcium Decahydrate

✗ C. Di-calcium Silicate

✗ D. Calcium Hydroxide

Question ID : **1841223635**

**Q.4** In making a concrete sample 0.45 water cement ratio was adopted. What happens, if the said water cement ratio is increased and other varibles are kept constant, for a given volume of concrete?

**Ans** ✓ A. Strength concrete decreases

✗ B. Workability of concrete decreases

✗ C. Strength of concrete increases

✗ D. Change of water cement ratio doesnot affect the hardened and fresh concrete properties

Question ID : **1841223636**

**Q.5** Which of the following data item is not broken down into smaller units is?

**Ans** ✗ A. Meta data

✓ B. Elementary data item

✗ C. Database management

✗ D. Data entry

Question ID : **1841223633**

**Q.6** As per IS 8112 - 2013, If the initial setting time of ordinary Portland cement-grade 43 is _____ such cement should be rejected.

**Ans** ✗ A. 45 minutes

✓ B. 25 minutes

✗ C. 55 minutes

✗ D. 35 minutes

Question ID : **1841223634**

**Q.7** "Dormitories" belongs to which subgroup, Under Classification of Group A buildings by National Building code of india.

Ans ✗ A. Sub-group A-4

✔ B. Sub-group A-3

✗ C. Sub-group A-5

✗ D. Sub-group A-1

Question ID : **1841223618**

**Q.8** In what type of scaffolding the working platform is supported on movable contrivances like ladders, tripods mounted on wheels?

Ans ✗ A. Patented Scaffolding

✗ B. Needle Scaffolding

✔ C. Trestle Scaffolding

✗ D. Suspended Scaffolding

Question ID : **1841223622**

**Q.9** If the Reynolds number is more than 4000 in a pipe flow, then the flow is called as:

Ans ✔ A. Irrotational Flow

✗ B. Turbulent Flow

✗ C. Translational Flow

✗ D. Laminar Flow

Question ID : **1841223630**

**Q.10** When a fluid is at rest, rate of increase of pressure in a vertical direction is equal to the weight density at that point is called as:

Ans ✗ A. Hydro Dynamic Law

✗ B. Pressure Dynamic Law

✔ C. Hydro Static Law

✗ D. Pressure Static Law

Question ID : **1841223628**

**Q.11** Calculate the Specific Weight of a liquid in $N/m^3$, if the weight of said liquid in 8 N for a volume of 0.5 litre.

Ans ✔ A. 4000

✗ B. 8000

✗ C. 2000

✗ D. 16000

Question ID : **1841223627**

**Q.12** The inner curve of an arched masonry is called as _____.

Ans ❌ A. Arcade

❌ B. Base line

❌ C. Voussiors

✅ D. Intrados

Question ID : **1841223621**

**Q.13** What operation the ALU of computer performs?

Ans ✅ A. Arithmetic

❌ B. Logarithmic

❌ C. Geometric

❌ D. Biometric

Question ID : **1841223632**

**Q.14** The type of closer used in masonry work obtained by cutting a triangular portion of the brick such that half a header and half a stretcher are obtained on the adjoining cut faces is:

Ans ❌ A. Mitred closer

❌ B. Bevelled closer

✅ C. King closer

❌ D. Queen closer

Question ID : **1841223619**

**Q.15** One stroke in Internal Combustion (IC) engines is equal to _____.

Ans ❌ A. 0.5 times the crank radius

❌ B. 1 times the crank radius

✅ C. 2 times the crank radius

❌ D. 4 times the crank radius

Question ID : **1841223617**

**Q.16** The Gross command area of an Irrigation canal is 60000 hectares out of which 80% is Cultivatable Command area. The canal Intensity of Irrigation for Rabi season is 60% and for Kharif season of 30%. Then the Crop Ratio will be:

Ans ❌ A. 2.667

❌ B. 1.333

❌ C. 1.986

✅ D. 0.500

Question ID : **1841223625**

**Q.17 Identify the correct statement regarding most economical rectangular channel.**

Ans ✔ A. Hydraulic depth is half the depth of flow

✘ B. Width is half the depth of flow

✘ C. Width is $3/4^{th}$ the depth of flow

✘ D. Hydraulic depth is $3/4^{th}$ the depth of flow

Question ID : **1841223631**

**Q.18 Mhich of the following method of Irrigation is most suitable method for Steep land /Terrain?**

Ans ✘ A. Check Flooding

✘ B. Basin Flooding

✘ C. Border Flooding

✔ D. Free Flooding

Question ID : **1841223623**

**Q.19 Identify the Dicken's formula used for estimating the Flood Discharge (Q).**

Ans ✔ A. $Q=CA^{3/4}$, where A is the catchment area and C is flood coefficient.

✘ B. $Q = 123A^{1/2}$, where A is the catchment area.

✘ C. $Q = CA^{5/6}$, where A is the catchment area and C is flood coefficient.

✘ D. $Q = CA^{2/3}$, where A is the catchment area and C is flood coefficient.

Question ID : **1841223624**

**Q.20 In the chemical method for underpinning foundations, which of the following solution is injected in water after pipes are driven?**

Ans ✔ A. Sodium Silicate

✘ B. Calcium Silicate

✘ C. Sulphate

✘ D. Magnesium Silicate

Question ID : **1841223620**

Section : **Discipline 3**

**Q.1 Which among the following factor increases the rate of demand in the consumption of water.**

Ans ✘ A. Stable community

✘ B. Increased water rates

✔ C. High pressure in the system

✘ D. Intermittent supply

Question ID : **1841223649**

**Q.2** As per IS 10500 : 2012, What is the permissible limit for the sulphate content (as $SO_4$ in mg/l) present in drinking water in the absence of alternate source?

**Ans**   ✗ A. 500 mg/l

   ✗ B. 600 mg/l

   ✓ C. 400 mg/l

   ✗ D. 200 mg/l

Question ID : **1841223652**

**Q.3** Schmutzdecke is a surface coating formed in which type of filter in filtration process?

**Ans**   ✗ A. Mixed Media Filter

   ✓ B. Slow Sand Filter

   ✗ C. Dual Media Filter

   ✗ D. Rapid Sand Filter

Question ID : **1841223654**

**Q.4** Calculate the bulk modulus of a material, whose young's modulus is 120 Gpa and poisson's ratio 0.25.

**Ans**   ✗ A. 100 Gpa

   ✗ B. 60 Gpa

   ✓ C. 80 Gpa

   ✗ D. 40 Gpa

Question ID : **1841223642**

**Q.5** Identify the correct statement with respect to various types of admixtures used in making concrete.

**Ans**   ✗ A. Addition of Superplasticizers in making concrete decreases the workability of concrete for a given water cement ratio.

   ✗ B. Use of retarders in making concrete allows the concrete to increase the rate of early strength development in concrete

   ✗ C. Accelerating admixtures are added to allow the concrete to be plastic and workable for a longer time than concrete without accelerators.

   ✓ D. Addition of Superplasticizers in making concrete decreases the water cement ratio required to attain a particular degree of workability.

Question ID : **1841223641**

**Q.6** Socket and spigot are absent in which of the following joint used in the joints of Sewer pipes.

**Ans**   ✗ A. Tyton Joint

   ✓ B. Viking Johnson Coupling Joint

   ✗ C. Expansion Joint

   ✗ D. Socket and Spigot Joint

Question ID : **1841223651**

**Q.7** A city has a supply of 15000 cubic meters of water per day is treated with a chlorine dosage of 0.5 ppm. For this purpose, the requirement of 25% bleaching powder per day would be.

Ans ✗ A. 45 kg

✓ B. 30 kg

✗ C. 15 kg

✗ D. 90 kg

Question ID : 1841223655

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**Q.8** Which of the following in not the natural light weight aggregate used in making light weight concrete?

Ans ✓ A. Perlite

✗ B. Scoria

✗ C. Diatomite

✗ D. Pumice

Question ID : 1841223639

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**Q.9** Consider below statements with respect to shear stress distribution in T sections and identify correct answer.

Statement A: Shear stress developed in any T section will always be maximum at the junction of flange and web.
Statement B: Shear stress developed in a T section will be maximum at its neutral axis.

Ans ✗ A. Statement A is correct and B is incorrect

✓ B. Statement B is correct and A is incorrect

✗ C. Both statements are incorrect

✗ D. Both satements are correct

Question ID : 1841223645

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**Q.10** Consider below statements with respect to workability of concrete and identify correct answer.

Statement A: For a given quantity of water and paste, smaller size of coarse aggregates will give higher workability.
Statement B: Lower aggregate cement ratio make the concrete mix cohesive and fatty to give better workability

Ans ✗ A. Both satements are correct

✓ B. Statement B is correct and A is incorrect

✗ C. Both statements are incorrect

✗ D. Statement A is correct and B is incorrect

Question ID : 1841223640

**Q.11** Identify the type of truss shown in below figure based on degree of redundancy. Consider that truss is supported with roller type at A and hinged type at F.
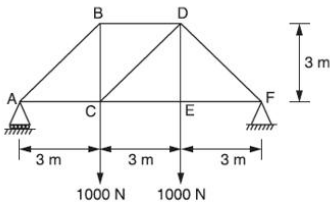


**Ans** ✗ A. Deficient truss

✓ B. Perfect truss

✗ C. Over rigid truss

✗ D. Redundant truss

Question ID : **1841223648**

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**Q.12 Consider below statements with respect to sulfate attack on cement concrete and identify correct answer.**

**Statement A: Expansion of cement paste takesplace in concrete due to sulfate attack on concrete.**
**Statement B: Calcium aluminate hydrate can react with sulfate salts and produce calcium sulfo aluminate.**

**Ans** ✗ A. Statement A is correct and B is incorrect

✓ B. Both satements are correct

✗ C. Both statements are incorrect

✗ D. Statement B is correct and A is incorrect

Question ID : **1841223638**

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**Q.13 A cantilever beam of length 4 m carries a gradually varying load, with an intensity zero at free end (B) to 3 kN/m at fixed end (A). Calculate the magnitude of bending moment at A.**

**Ans** ✗ A. 2 kN-m

✗ B. 4 kN-m

✓ C. 8 kN-m

✗ D. 6 kN-m

Question ID : **1841223643**

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**Q.14 A rectangular strut of width 150 mm and thickness 120 mm carries a load of 180 kN. Calculate the maximum stress in the section if the load is eccentric by 20 mm in the direction of width and concentric in the direction of thickness. Consider that the direct stress due to applied load as 10N/mm$^2$ and stress due to eccentric loading as 4 N/mm$^2$. Ignore the self weight of the strut.**

**Ans** ✓ A. 18 MPa

✗ B. 16 MPa

✗ C. 10 MPa

✗ D. 12 MPa

Question ID : **1841223646**

**Q.15** In the design of a sedimentation tank, a flow of 5 MLD occurs. If the surface loading rate is to be 2 liters/day/cm$^2$, calculate the surface area of basin in m$^2$.

**Ans**   ❌ A. 25000

   ❌ B. 250

   ✅ C. 2500

   ❌ D. 25

Question ID : **1841223653**

**Q.16** The most suitable type of Distribution system in which main pipe lines are provided around the area i.e., peripherally for a town or area having well planned streets and roads is?

**Ans**   ❌ A. Reticulation System

   ❌ B. Grid-Iron System

   ✅ C. Circular System

   ❌ D. Dead End System

Question ID : **1841223656**

**Q.17** Calculate the power transmitted by a solid circular shaft of diameter 100 mm, if the average torque transmitted by the shaft is 8 kN-m at a speed of 150 rpm.

**Ans**   ❌ A. 35π kW

   ❌ B. 30π kW

   ✅ C. 40π kW

   ❌ D. 25π kW

Question ID : **1841223647**

**Q.18** Which of the following method is more suitable for transportation of concrete in highrise construction projects and fast too?

**Ans**   ❌ A. Belt conveyors

   ✅ B. Crane with bucket and rope

   ❌ C. Chute

   ❌ D. Dumpers

Question ID : **1841223637**

**Q.19** An Impermeable Geologic formation which neither contains water nor transmits water is:

**Ans**   ❌ A. Aquiclude

   ❌ B. Aquitard

   ❌ C. Aquifer

   ✅ D. Aquifuge

Question ID : **1841223650**

**Q.20** A rectangular beam 200 mm wide and 400 mm deep is simply supported over a span of 5 meters. If the beam is subjected to a uniformly distributed load of 4 kN/m, find the section modulus of the beam.

**Ans** ✅ A. $5.33 \times 10^6$ mm$^3$

❌ B. $6.75 \times 10^6$ mm$^3$

❌ C. $3.56 \times 10^6$ mm$^3$

❌ D. $4.16 \times 10^6$ mm$^3$

Question ID : **1841223644**

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Section : **Discipline 4**

**Q.1** Which of the following command is used In AutoCADD for opening a new drawing tab?

**Ans** ❌ A. Ctrl + E

✅ B. Ctrl + N

❌ C. Ctrl + W

❌ D. Ctrl + S

Question ID : **1841223672**

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**Q.2** As per recommendations of National Building organization of India, for small sewers with 100 mm diameter, what is the gradient required to generate the self cleaning velocity?

**Ans** ❌ A. 1 in 120

❌ B. 1 in 30

❌ C. 1 in 90

✅ D. 1 in 60

Question ID : **1841223657**

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**Q.3** A soil sample has its porosity 30%, calculate its void ratio.

**Ans** ❌ A. 0.667

❌ B. 0.176

❌ C. 0.285

✅ D. 0.428

Question ID : **1841223659**

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**Q.4** According to IRC, In the design of curves on urban road stretches with frequent intersections, the limiting super elevation considered will be:

**Ans** ❌ A. 20%

❌ B. 10%

❌ C. 7%

✅ D. 4%

Question ID : **1841223675**

**Q.5** According to IS soil classification, Silty soil has:

**Ans**   ✗ A. Particles Larger than 75 micron Sieve and exhibits larger strength when air dried

   ✗ B. Particles smaller than 75 micron Sieve and exhibits larger strength when air dried

   ✔ C. Particles smaller than 75 micron Sieve and exhibits little or no strength when air dried

   ✗ D. Particles Larger than 75 micron Sieve and exhibits little or no strength when air dried

Question ID : **1841223660**

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**Q.6** Calculate the distribution factor for the member BA shown in below figure, consider that EI is constant through out its length ABC.
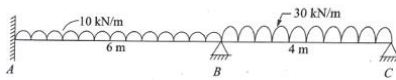


**Ans**   ✗ A. 0.2

   ✗ B. 0.35

   ✔ C. 0.47

   ✗ D. 0.58

Question ID : **1841223665**

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**Q.7** According to Industrial dispute act 1947, no employer carrying on any public utility service shall strike or lock-out any of his workmen:

**Ans**   ✗ A. Within 48 days of giving such notice

   ✗ B. Within 25 days of giving such notice

   ✔ C. Within 14 days of giving such notice

   ✗ D. Within 20 days of giving such notice

Question ID : **1841223669**

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**Q.8** Which of the following shortcut is used in AutoCADD for trimming geometry?

**Ans**   ✗ A. T M

   ✔ B. T R

   ✗ C. T

   ✗ D. T I

Question ID : **1841223673**

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**Q.9** According to IS 18001 : 2007 code book, the Occupational health and safety, principle 1 Refers to:

**Ans**   ✔ A. Commitment and Policy

   ✗ B. Management review

   ✗ C. Implementation and operation

   ✗ D. Planning

Question ID : **1841223667**

**Q.10** Respect in Environmental ethics can be described as:

Ans ✅ A. Willingness to show consideration for natural resources, wildlife, flora and fauna

❌ B. Willingness to show consideration for natural wildlife, flora and fauna only

❌ C. Willingness to show consideration for natural resources and wildlife only

❌ D. Willingness to show consideration for natural resources only

Question ID : **1841223671**

**Q.11** Which of the following test determines the hardness or softness of bitumen?

Ans ✅ A. Penetration Test

❌ B. Flash Point Test

❌ C. Solubility Test

❌ D. Specific Gravity Test

Question ID : **1841223676**

**Q.12** Calculate the critical gradient at which quick sand condition occurs for a Coarse grained soil, which has a void ratio of 0.65 and specific gravity of 2.65.

Ans ❌ A. 1.333

❌ B. 2.33

✅ C. 1

❌ D. 2.08

Question ID : **1841223661**

**Q.13** Consider below statements with respect to analysis of three hinged arches and identify correct answer.

Statement A: Any rise or fall in temperature develops huge temperature stresses in three hinged arches.
Statement B: Two hinged arch is more flexible when compared to a three hined arch.

Ans ✅ A. Both statements are incorrect

❌ B. Both satements are correct

❌ C. Statement B is correct and A is incorrect

❌ D. Statement A is correct and B is incorrect

Question ID : **1841223666**

**Q.14** Workman's compensation act 1923 came to force on _____.

Ans ✅ A. 1$^{st}$ july 1924

❌ B. 21$^{st}$ july 1924

❌ C. 10$^{th}$ july 1924

❌ D. 12$^{th}$ july 1924

Question ID : **1841223668**

**Q.15** Which of the following test is known as Quick shear test?

Ans    ✗ A. Drained test

      ✔ B. Undrained test

      ✗ C. Unconsolidated drained test

      ✗ D. Consolidated drained test

Question ID : **1841223663**

**Q.16** Consider a beam AB with fixed end supports at both of its ends, the maximum number of support reactions which can develop in the said case is _____. Consider that the beam is subjected to an inclined force of magnitude P kN.

Ans    ✔ A. 6

      ✗ B. 3

      ✗ C. 5

      ✗ D. 4

Question ID : **1841223664**

**Q.17** Identify the external issue in the process of understanding the context of an organization according to ISO 9004 : 2018.

Ans    ✗ A. Resources

      ✗ B. Size and Complexity

      ✗ C. Innovation

      ✔ D. Natural Environment

Question ID : **1841223670**

**Q.18** What is the shape of front view if a circular surface plane is making 30 degrees with both Horizontal and vertical plane?

Ans    ✗ A. Oval

      ✗ B. Line

      ✔ C. Ellipse

      ✗ D. Circle

Question ID : **1841223674**

**Q.19** The most uniform soil deposit formed after transportation of soil is:

Ans    ✗ A. Shore Deposit

      ✗ B. Delta Deposit

      ✔ C. Wind Laid Deposit

      ✗ D. Glacial Deposit

Question ID : **1841223658**

**Q.20** Identify the Hough Compression index. ($C_c$) equation for precompressed soil, where, $e_o$ is in-situ void ratio.

Ans
 ✗ A. $C_c = 0.15 \, (e_o - 0.27)$

 ✗ B. $C_c = 0.2 \, (e_o - 0.27)$

 ✔ C. $C_c = 0.3 \, (e_o - 0.27)$

 ✗ D. $C_c = 0.25 \, (e_o - 0.27)$

Question ID : **1841223662**

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Section : **Discipline 5**

**Q.1** To calculate the compressive strength of compression member, Imperfection factor considered for Buckling 'class d' is _____.

Ans
 ✗ A. 0.21

 ✗ B. 0.49

 ✗ C. 0.34

 ✔ D. 0.76

Question ID : **1841223691**

**Q.2** Consider below statements with respect to facing points of turnouts in railway crossings and identify correct answer.

Statement A: Trains pass over the Crossing first and then they pass over Switches.
Statement B: Trains pass over the switches first and then they pass over crossing.

Ans
 ✔ A. Statement B is correct and A is incorrect

 ✗ B. Statement A is correct and B is incorrect

 ✗ C. Both satements are correct

 ✗ D. Both statements are incorrect

Question ID : **1841223679**

**Q.3** Minimum thickness specified by IRC-78-2000 for well steining in bridge foundation is _____.

Ans
 ✗ A. 600 mm

 ✗ B. 300 mm

 ✔ C. 500 mm

 ✗ D. 400 mm

Question ID : **1841223680**

**Q.4** In a bolted connection, the ratio of net tensile area at root of threads to nominal plain shank area of bolt may be taken as _____ as per IS 1367 (Part-1) or in the absence of proof table

**Ans** ✗ A. 0.88

✗ B. 0.87

✗ C. 0.68

✔ D. 0.78

Question ID : 1841223688

**Q.5** Quantity of differents items of work in a two roomed building shown in below figure is to be estimated using centre line method. The number of joints to be considered for the computation is _____.
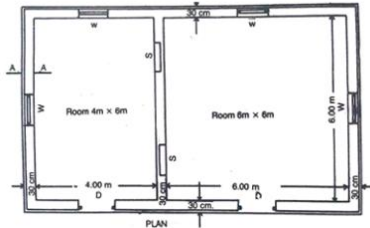


**Ans** ✗ A. 3

✔ B. 2

✗ C. 1

✗ D. 4

Question ID : 1841223694

**Q.6** What is the Sleeper density used in Indian railways for the main tracks _____? (Where M is Rail length in meters)

**Ans** ✔ A. M + 4 to M + 7

✗ B. M + 2 to M + 4

✗ C. M + 5 to M + 10

✗ D. M + 3 to M + 6

Question ID : 1841223678

**Q.7** The ductility factor considered for common structural steels exhibiting minimum specified ductility, while calculating effective net area in case of design of tension members will be _____.

**Ans** ✗ A. 2

✗ B. 0

✔ C. 1

✗ D. 3

Question ID : 1841223689

**Q.8** According to IS 800 - 2007, the effective length of prismatic compression member of unsupported length $L$ is restrained against rotation and translation at both ends will be _____.

**Ans** ✔ A. 0.65L

✘ B. 1.2L

✘ C. 2L

✘ D. 0.8L

Question ID : **1841223690**

**Q.9** Identify the silicious rock based on chemical classification of Rocks.

**Ans** ✘ A. Marble

✔ B. Gneiss

✘ C. Laterite

✘ D. Dolomite

Question ID : **1841223681**

**Q.10** While conducting tension test on cement, load on the Briquette should be applied at:

**Ans** ✘ A. 0.13 times from both the edges

✘ B. One third from both the edges

✔ C. The centre

✘ D. Two third from both edges

Question ID : **1841223682**

**Q.11** A building requires 9 RCC columns of size 0.2 m breadth, 0.2 m thickness and 4 m height. Estimate the quantity of steel reinforcement required, if the steel reinforcement to be provided is 1.5% by their gross volume.

**Ans** ✘ A. 0.956 quintal

✔ B. 1.695 quintal

✘ C. 1.897 quintal

✘ D. 2.469 quintal

Question ID : **1841223695**

**Q.12** In which of the following case the lime slakes relatively in slow manner during Slaking of lime?

**Ans** ✔ A. Limes from fine grained stones and Dense lumpy lime

✘ B. Limes from fine grained stones and Pulverized lime

✘ C. Limes from Coarse grained stones and Dense lumpy lime

✘ D. Limes from Coarse grained stones and lumpy lime

Question ID : **1841223683**

**Q.13** Which of the following type of estimate works out the quantities of each item of work to arrive the cost?

Ans   ✗ A. Preliminary estimate

     ✗ B. Cube rate estimate

     ✗ C. Plinth area estimate

     ✔ D. Detailed estimate

Question ID : **1841223692**

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**Q.14** According to IS-2062 for E 165 (Fe 290) grade of steel, the minimum elongation percentage is _____.

Ans   ✗ A. 45

     ✗ B. 72

     ✔ C. 23

     ✗ D. 30

Question ID : **1841223686**

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**Q.15** Consider below statements with respect to terms used in valuation and identify correct answer.

Statement A: The value of a property at the end of the utility period without being dismantled is known as scrap value.
Statement B: The value of property or structure reduced due to a reason that "out of date in style" is known as obsolescence.

Ans   ✗ A. Both satements are correct

     ✗ B. Statement A is correct and B is incorrect

     ✔ C. Statement B is correct and A is incorrect

     ✗ D. Both statements are incorrect

Question ID : **1841223696**

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**Q.16** What Is the maximum permissible speed for group D Indian Railways as per Indian railway specification?

Ans   ✗ A. 130 kmph

     ✗ B. 160 kmph

     ✗ C. 120 kmph

     ✔ D. 100 kmph

Question ID : **1841223677**

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**Q.17** Which of the following is the correct unit of measurement for "quarrying of stone or boulder"?

Ans   ✔ A. Cubic meter

     ✗ B. Numbers

     ✗ C. Square meter

     ✗ D. Running meter

Question ID : **1841223693**

**Q.18** The heaviest I-section for the same depth In IS classification of Rolled steel Beams will be:

Ans ✔ A. ISHB

✘ B. ISLB

✘ C. ISWB

✘ D. ISMB

Question ID : **1841223687**

**Q.19** Star stake, a type of defect in timber arises due to _____.

Ans ✘ A. wind causing young tree to turn in one direction

✔ B. severe frost and fierce heat of sun

✘ C. greater evaporation of sap at the end grains of log

✘ D. growth of layers of sapwood over Wounds

Question ID : **1841223684**

**Q.20** French polish used in paintings is what type of varnish?

Ans ✘ A. Water Varnish

✔ B. Spirit Varnish

✘ C. Flat Varnish

✘ D. Acrylic Varnish

Question ID : **1841223685**