నమస్తే తెలంగాణ **నిపుణ** III
Guide to Excellence
పోటీ పరీక్షల ప్రత్యేకం
శుక్రవారం 20 అక్టోబర్ 2023

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సూయజ్ కాలువను జాతీయం చేసిన ఈజిప్ట్ అధ్యక్షుడు? — అబ్దుల్ నాసర్

పాలస్తీనా విమోచనా సంఘం (పీఎల్‌వో) నాయకుడు? — యాసర్ అరాఫత్

ఏ ఒలింపిక్స్‌లో ఇజ్రాయెల్ ఒలింపిక్ క్రీడల బృందాన్ని అపహరించి చంపేశారు? — మ్యూనిచ్

యూఎస్ఎస్ఆర్‌లో పెరిస్త్రాయికా విధానాలను ప్రవేశ పెట్టింది? — గోర్బచేవ్

The number of prime numbers 1 to 100 is?

NUMBER SYSTEM PRACTICE QUESTIONS

1. In a test of 25 questions (+4) marks are given for every correct answer and (-2) ma rks are given for every inco rrect answer. Sunitha attem pted all questions and gets a score of 76, then the number of correct answers attempted by her is?
1.23   2. 21   3. 20   4.22   **Ans:2**

Sol: Let the number of correct answered questions = x, inco rrect answered questions = 25-x according to the given sum $4x +(-2)(25-x) =76 => 4x -50 + 2x = 76 => 6x = 126 => x = 21$

2. The number of prime numbers 1 to 100 is?
1.20   2.23   3.25   4.24   **Ans:3**

Sol: Prime numbers 1 to100 are2, 3,5,7,11,13,17,19,23,29, 31, 37,41,43,47,53,59,61, 67,71, 73,79,83,89,97.They are 25 in number.

3. The number of rational num bers between 1 to 100 is?
1. 100   2. 993.   101   4.Infinite   **Ans:4**

Sol: There are infinite rational and irrational numbers are there between two rational num bers, so number ofrational numbers between 1 and 100 is infinite.

4. The H.C.F. of any two cons ecutive even integers is?
1.1   2.2   3.3   4.4   **Ans:2**

Sol: The H.C.F. of any two conse cutive even integers is 2. Exa mple: Let 18 and 20 are two consecutive even numbers prime factorization $18 = 2 \times 3 \times 3$ $20 = 2 \times 2 \times 5$, common factor is 2.∴The H.C.F. of 18 and 20 is 2.

5. The smallest number that must be added to 321727, so that the resultant exactly divisible by 3 is?
1.3   2. 4   3. 1   4.2   **Ans:4**

Sol: Given number is 32127 sum of the digits of the given number is $3 + 2 + 1 + 7 + 2 + 7 = 22$. multiple of 3 after 22 is 24, we need to add 2 to 22 to get the sum should be divi sible by 2.So the new number 321727+2 = 321729 is exactly divisible by 3.

6. Number of integers lie between 35^2 and 36^2?

1. 74   2.68   3.72   4.70   **Ans:4**

Sol: the number of integers betweenn^2 and $(n+1)^2$ is 2n So, number of integers lie bet ween 35^2 and $36^2 = 2(35) = 70$.

7. The difference between the L.C.M and H.C.F. of two numbers is 133. If the L.C.M. is 20 times the H.C.F. and one of the numbers is 35, then the other number is?
1.20   2. 25   3. 42   4. 28   **Ans:4**

Sol: Given the difference between LCM and HCF = 133 =>LCM-HCF=133 and LCM = 20×HCF, one number $=> 35 \times x = 140 \times 7 => x= \frac{140 \times 7}{35} = 28.$

8. The difference between the greatest and the smallest 5-digit number formed by the digits 6, 2, 0, 3 and 8 is?
1.65952   2. 64952   3. 64852   4.65852   **Ans:1**

Sol: The greatest number formed by the digits 6 2, 0, 3, 8 is 86320 and the small est num ber formed by the digits 6 2, 0,3,8is 20368. The difference between these numbers is 86320-20368= 65952.

9. The scale of a map is 1:30000. If two cities are 4cm apart in the map then the actual distance between them is?
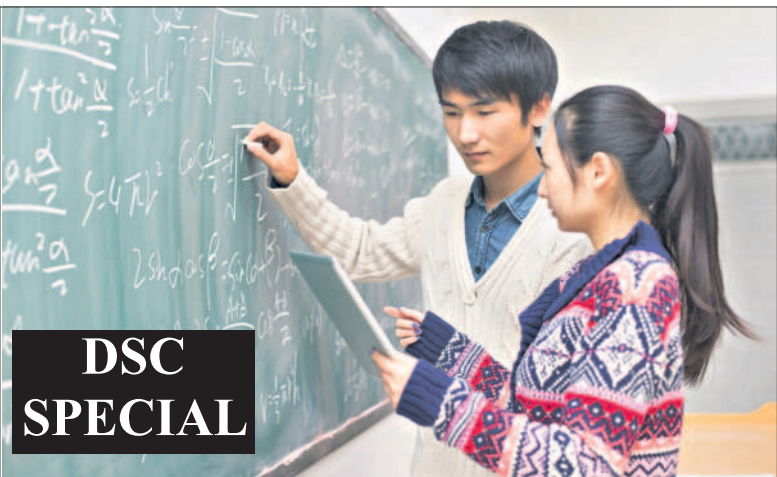1.1.2m   2. 2.   1.2km   3.10.2 km   4.10.2km   **Ans:2**

Sol: Given the ratio 1:30000, let the actual distance between them is
1.5   2. 3   3. 6   4.384615   **Ans:3**

y then $\frac{1}{30000} = \frac{4}{y} = 120000$ cm
$=>y = 4 \times 30000 = 120000$ cm
(∵ 1km = 100 x 1000 cm)
$=> y = \frac{120000}{100000}$ km=> 1.2km

10. $\frac{5}{13} = 0.\overline{384615}$ is a non-terminating repeating decimal then its periodicity is?
1. 5   2. 3   3. 6   4. 384615   **Ans: 3**

Sol: $\frac{5}{13} = 0.\overline{384615}$ in this given non-terminating repeating deci mal the digits 384615 are repeating they are 6 in number hence periodicity is 6 and period is 384615(digits which are repeating).

11. If $\sqrt{2}$ = 1.414 then the value of $\sqrt{(3/24)}$ is?

1.3.535   2.0.5335   3. 0.3535   4. 0.352   **Ans:1**

Sol: Given $\sqrt{2} = 1.414$
$\sqrt{\frac{3}{24}} = \sqrt{\frac{1}{8}} = \frac{1}{2\sqrt{2}} = \frac{\sqrt{2}}{4} = \frac{1.414}{4} = 0.3535$

12. Which of the following is a prime number?
1.331   2. 481   3. 437   4.357   **Ans:1**

Sol: 331 is a prime number
$481 = 13 \times 37$
$437 = 19 \times 23$
$357 = 3 \times 119$

13. Sum of two numbers is 95. If one number exceeds the other by 3, then difference of two numbers is?
1.3   2.4   3.5   4.6   **Ans:1**

Sol: Let the two numbers be x and y according to the sum $x + y = 95$, and $x = 3+y$ then we have $3+y +y = 95 => 4y = 95-3 => 4y=92 => y = 92/4 = 23$ then $x= 3+ y = 3 + 23 = 26$ now the difference of the two numbersis 26-23 = 3.

14. The HCF of two numbers is 6 and their LCM is 36. If one of the numbers is 12 then another number?
1.16   2. 20   3.22   4.18   **Ans:4**

Sol: Given HCF of two numbers = 6, LCM = 36, one number =12 let other number = x, we know that Product of two numbers=LCM ×HCF,
$x \times 12 = 36 \times 6 => x = \frac{36 \times 6}{12} = 18$

15. A daily newspaper is pub lished with 16pages. If every day 15,020 copies are pri nted then number of pages printed in a day are?
1.2,45,320   2. 2,40,320   3.2,32,400   4. 2,46,320   **Ans:2**

Sol: Number of newspapers 15,020 number of pages in ea chpaper = 16, total number of pages printed

16. = 15,020 × 16 = 2,40,32016. The product of two numbers is 3276. If their HCF is 6 then LCM?
1. 546   2.645   3.540   4.640   **Ans:1**

Sol: Given the product of two numbers = 3276, HCF of two numbers = 6, LCM = ? we know that LCM × HCFProduct of two numbers
$=> LCM = \frac{product\ of\ the\ two\ numbers}{HCF}$
$=> LCM = \frac{3276}{6} = 546.$

17. Difference of rational num ber and its reciprocal is 8/3 then the numbers are?
1. -3 or $\frac{1}{3}$ 2. -4 or $\frac{4}{3}$ 3. 3 or $\frac{-1}{3}$ 4. 4 or $\frac{-4}{3}$ **Ans: 3**

Sol: Let the number be x, and its reciprocal is $\frac{1}{x}$ then the difference between them is $x - \frac{1}{x} = \frac{8}{3}$
$=> \frac{x^2-1}{x} = \frac{8}{3} => 3(x^2 - 1) = 8x$
$=> 3x^2 - 8x - 3 = 0$
where a=3, b = -8, c= -3 then
$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$
$=> x = \frac{-(-8) \pm \sqrt{(-8)^2 - 4(3)(-3)}}{2(3)}$
$=> x = \frac{8 \pm \sqrt{64+36}}{2(3)}$
$=> x = \frac{8 \pm \sqrt{100}}{2(3)} => x = \frac{8 \pm 10}{2(3)}$
$=> x = \frac{8 + 10}{2(3)} = 3$ or $x = \frac{8 - 10}{2(3)} = \frac{-1}{3}$
so x = 3 or $\frac{-1}{3}$.

18. These are two pairs of twin prime numbers in three pri me numbers. The product of those three numbers is?
1.2145   2. 693   3.105   4.30   **Ans:3**

Sol: the product of the given numbers
$30 = 2 \times 3 \times 5$
$105 = 3 \times 5 \times 7$
$693 = 3 \times 3 \times 7 \times 11$
$2145 = 3 \times 5 \times 11 \times 13$
twin primes means the difference between the two prime num bers is 2. In the question given 2 pairs of twin primes means (3, 5) and (5, 7) so the required number is 1o5.

19. The number should be subtracted from $\frac{-5}{7}$ to get -1 is?
1. $\frac{-2}{7}$ 2. $\frac{2}{7}$ 3. $\frac{12}{7}$ 4. $\frac{-12}{7}$ **Ans: 2**

Sol: Let the number should be subtracted from $(-5)/(7)$be x, then according to the sum,
$\frac{-5}{7} - x = -1 => \frac{-5}{7} + 1 = x$
$=> \frac{-5+7}{7} = \frac{2}{7} = x.$

20. The three numbers are in the ratio 1:2:3 and their HCF is 12 then the numbers are?
1.20,40, 60   2. 3 6,18   3.5 10,15   4.1224,36   **Ans:4**

Sol: Given the ratio of 3 numbers is 1:2:3 and their HCF is 12 let the three numbers are 1x, 2x, 3x then their HCF is 1x =12 => x = 12 then 2x =2(12) = 24 and 3x= 3(12) =36. The numbers are 12, 24, 36.

21. In the given product $(6)^{10}×(35)^{17}×(11)^{27}$ the total number of prime factors are?
1.81   2.54   3.45   4.64   **Ans:1**

Sol: Given$(6)^{10}×(35)^{17}×(11)^{27}$
$=(2\times3)^{10}×(7\times5)^{17}×(11)^{27}$
$=2^{10}×3^{10}×7^{17}×5^{17}×11^{27}$total number of prime factors are $10+10+17+17+27 = 81.$

DSC SPECIAL

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పక్షులు

- పక్షుల అధ్యయనాన్ని ఆర్నిథాలజీ అంటారు.
- ప్రముఖ భారతీయ పక్షి శాస్త్రవేత్త సలీం అలీని 'ఇండియన్ బర్డ్ మ్యాన్' అంటారు.
- అంతర్జాతీయ వలస పక్షుల దినోత్స వాన్ని ఏటా మే 4న నిర్వహిస్తారు.
- అతిచిన్న ఎగరలేని పక్షి– కివి (న్యూజిలాండ్ జాతీయ పక్షి)
- అతిపెద్ద గుడ్లు పెట్టే ఎగరలేని పక్షి – ఆస్ట్రిచ్
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- ముందుకు, వెనుకకు ఎగిరే అతిచిన్న పక్షి – హమ్మింగ్
- ఇండియాలో అంతరించే దశలో ఉన్న అతిపెద్ద పక్షి – బట్టమేక పిట్ట
- అంతరించే దశలో ఉన్న మాపన జాతీయ పక్షి – దొడొ
- తెలంగాణ రాష్ట్ర పక్షి – కొరాసియస్ బెంగాలెన్సిస్ (పాల పిట్ట)