Q:1 If a 10-digit number 46789x531y is divisible by 72, then the value of $(2x + 5y)$, for the largest value of x is:
1. 38
2. 28
3. 10
4. 16

Q:2 Out of 339, 555, 729 and 224 which of the following number is not divisible by 3?
1. 729
2. 555
3. 224
4. 339

Q:3 Find the least number that must be added to 8932 to make it exactly divisible by 84.
1. 41
2. 37
3. 56
4. 49

Q:4 What will be the H.C.F. of 21/50 and 14/45?
1. 7/225
2. 7/450
3. 25/4
4. None of these

Q:5 Which natural number is nearest to 8769, which is completely divisible by 70?
1. 8820
2. 8760
3. 8770
4. 8750

Q:6 The H.C.F of three numbers is 8. Find these numbers, if the ratio of these numbers is 2 : 5 : 7.
1. 12, 30, 42
2. 16, 40, 56
3. 24, 36, 49
4. 8, 40, 56

Q:7 The L.C.M and H.C.F of two numbers are 40 and 55. If one number is 22 then, find another number.
1. 150
2. 110
3. 100

4. 120

Q:8 Find the minimum number that should be subtracted from the smallest 5-digit number such that the resultant is divisible by 76.
1. 5
2. 8
3. 11
4. 13

Q:9 Find the greatest number that divides 320, 378, and 552 and leaves the same remainder in each case.
1. 13
2. 73
3. 58
4. 29

Q:10 Which of the following three numbers is/are divisible by 11?
A. 84478
B. 80160
C. 82984
1. Only A
2. Only B
3. Only C
4. All of the above

Answer Key

1. (2)	2. (3)	3. (3)	4. (2)	5. (4)
6. (2)	7. (3)	8. (3)	9. (3)	10. (3)

Answers and Solutions

Q:1 The Correct Answer is **option 2** i.e. **28**.
Divisibility rule:
If a number is divisible by 72 it must be divisible by 8 and 9
Divisibility by 8:
The last 3 digits must be divisible by 8
Eight-digit no.: 46789x531y is divisible by 72
The last 3 digits 31y must be divisible by 8:
Hence, y = 2
Now it will be divisible by 9 also:
Sum of digits = 4 + 6 + 7 + 8 + 9 + x + 5 + 3 + 1 + 2 = 45 + x
The largest value of x so that it is divisible by 9 = 9
Hence,
$\Rightarrow (2x + 5y) = 2 \times 9 + 5 \times 2 = 28$

Q:2 The correct answer is **Option 3** i.e. **224**.
We will test for divisibility by adding the digits and if the result is divisible by 3 then the number is also divisible by 3.
3 + 3 + 9 = 15, divisible by 3
5 + 5 + 5 = 15, divisible by 3
7 + 2 + 9 = 18, divisible by 3
2 + 2 + 4 = 8, not divisible by 3
The number 224 is not divisible by 3.

Q:3 The correct answer is **Option 3** i.e. **56**.
When 8932 is divided by 84, we get 106 as the quotient and 28 as the remainder.
8932 = 106 × 84 + 28
Hence, To make it exactly divisible by 84, 84 - 28 = 56 should be added.

Q:4 The correct answer is **option 2** i.e. **7/450**
H.C.F. of fractions = H.C.F. of numerator/L.C.M. of the denominator
$\Rightarrow$ H.C.F. of the numerator (21, 14) = 7
$\Rightarrow$ L.C.M. of the denominator (50, 45) = 450
$\Rightarrow$ 7/450

Q:5 The correct answer is **option 4** i.e. **8750**.
On dividing 8769 by 70 we get 19 remainder
So in order to make this divisible we need to subtract the remainder
Therefore, the Nearest number is (8769 - 19) = 8750

Q:6 The correct answer is **option 2** i.e. **16, 40 and 56**.
Let the numbers be 2x, 5x and 7x and as the HCF is the highest common factor, the HCF will be x
Now as per the question, H.C.F is 8, so the required numbers are 16, 40 and 56.

Q:7 The correct answer is **Option 3** i.e. **100**.
Let, another number be a
We know that,
L.C.M of the number × H.C.F of the number = Product of these numbers
40 × 55 = 22 × a
a = (40 × 55)/22
a = 100

Q:8 The correct answer is **option 3** i.e. **11**.
Smallest 5-digit number = 10000
Dividing 10000/76 = 2500/19
$\Rightarrow$ 131 is the quotient and 11 is the remainder
$\therefore$ 11 should be subtracted.

Q:9 The correct answer is **option 3** i.e. **58**.
The number that leaves an equal remainder will be the H.C.F of the differences between the three numbers,
Hence finding differences,
378 - 320 = 58
552 - 378 = 174
552 - 320 = 232
Now the required number = H.C.F of 58, 174, 232 = 58

Q:10 The correct answer is **option 3** i.e. **Only C**.
Concept used:
The number is completely divided by 11 if the difference of the sum of digits at odd position and sum of digits at even position in a number is 0 or 11.
Calculation:
For option A: i.e. 84478

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Asutosh Mukherjee Road, College Para, Hathi More, Siliguri, West Bengal
+91 - 8436586516, +91-8436900456
thedhronas@gmail.com
thedronas.com

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⇒ (8 + 4 + 8) − (4 + 7) = 20 − 11

⇒ 9 (which is not equal to 0 or multiple of 11)

For option B: i.e. 80160

⇒ (8 + 1 + 0) − (0 + 6) = 9 − 6

⇒ 3 (which is not equal to 0 or multiple of 11)

For option C: i.e. 82984

⇒ (8 + 9 + 4) − (2 + 8) = 21 − 10

⇒ 11

Hence, only option C is correct.