Ex-9.3

1. (i), (iii)
2. (ii), (iv)
3. (i), (iii), (iv)
4. (ii), (iv)
5. (i), (iii)
6. (i), (ii)
7. (i), (iii)
8. (i), (ii)

Ex-9.3

1. (i), (iii) are divisible by 2 because the last units digits of 352 and 496 are even numbers.
2. (ii), (iv) are divisible by 4 because the number formed by the tens digits and ones digits are 32 and 32 which are divisible by 4.
3. (ii) (iii) (iv) are divisible by 8 because the number formed by the last three digits of the numbers are 536, 760 and 320 respectively which are divisible by 8.
4. (ii), (iv) by 3 as the sum of the digits of the numbers are 12 and 27 respectively which are divisible by 3.
5. (i), (iii) are divisible by 9 as the sum of the digits of the numbers are 9 and 27 respectively which are divisible by 9.
6. (i), (ii) are divisible by 6 because 324 and 2010 are divisible by both 2 and 3.
7. (i), (iii) are divisible by 5 because the ones digit of 5080 and 755 are 0 and 5.
8. (i), (ii) are divisible by 10 because the ones digit of 9990 and 0 are 0 and 0.

2.7.21

Divisibility rules

23579

Sum of digits in odd place = 2+5+9 = 16
Sum of digits in even place = 3+7 = 10
Difference of the sum of odd place and even place
= 16 − 10 = 6
6 is not divisible by 11.
So, 23579 is not divisible by 11.

11: If the difference between the sum of the even place digits and odd odd place digits is 0 or a number divisible by 11.

Ex − 9.3

9. (i) 5918
Sum of digits in odd place = 8+9 = 17
Sum of digits in even place = 1+5 = 6
Difference = 17 − 6 = 11
11 is divisible by 11.
∴ 5918 is divisible by 11.

(ii) 68717
Sum of digits in odd place = 7+7+6 = 20
Sum of digits in even place = 1+8 = 9
Difference = 20 − 9 = 11
11 is divisible by 11.
∴ 68717 is divisible by 11.

(iii) 3882
Sum of digits in odd place = 2+8 = 10
Sum of digits in even place = 3+8 = 11
Difference = 11 − 10 = 1

1 is not divisible by 11.
∴ 3882 is not divisible by 11.

(iv) 10857
Sum of digits in odd place = 7+8+1 = 16
Sum of digits in even place = 5+0 = 5
Difference = 16 − 5 = 11
11 is divisible by 11.
∴ 10857 is divisible by 11.

11. (i) 64M3
6+4+M+3 = 13+M

64M3 is divisible by 3 if 13+M is divisible by 3.
If M = 2, 13+2 = 15 divisible by 3.
∴ 6423 is the required answer.

(ii) 46M46
4+6+M+4+6 = 20+M
46M46 is divisible by 3 if 20+M is divisible by.
If M = 1 20+1 = 21 divisible by 3.
∴ 46146 is the required answer.

(iii) 27M53
2+7+M+5+3 = 17+M
27M53 is divisible by 3 if 17+M is divisible by 3.
If M = 1 17+1 = 18 divisible by 3.
∴ 27153 is the required answer.

12. (i) 76M91

7+6+M+9+1 = 23+M

76M91 is divisible by 9 if 23+M is divisible by 9.

If M = 4 23+4 = 27 divisible by 9.

∴ 76491 is the required answer.

(ii) 77548M

7+7+5+4+8+M = 31+M

77548M is divisible by 9 if 31+M is divisible by 9.

If M = 5 31+5 = 36 divisible by 9.

∴ 775485 is the required answer.

(iii) 627M9

6+2+7+M+9 = 24+M

627M9 is divisible by 9 if 24+M is divisible by 9.

If M = 3 24+3 = 27 divisible by 9.

∴ 62739 is the required answer.

14. (i) False

(ii) True

(iii) True

(iv) True

Ex-9.3

10. (i) 960
9+6=15
960 is divisible by 3.
960 is divisible by 5.
Yes, 960 is divisible by 15.

(ii) 8295
8+2+9+5=24
8295 is divisible by 3.
8295 is divisible by 5.
Yes, 8295 is divisible by 15.

(iii) 10243
1+2+4+3=10
10243 is not divisible by 3.
No, 10243 is not divisible by 15.

(iv) 5013
5+3+1=9
5013 is divisible by 3.
5013 is not divisible by 5.
No, 5013 is not divisible by 15.

13. (i) 39m2
Sum of odd place digits = 2+9=11
Sum of even place digits = 3+m
11-(3+m) = 11-3-m = 8-m
The no. is divisible by 11 if → 8-m=0
m=8
So, the required no. is 3982.

(ii) 3M422
Sum of odd place digits = 2+4+3=9
Sum of even place digits = 2+M
9-(2+M) = 9-2-M = 7-m
The no. is divisible by 11 if, 7-m=0

$m = 7$

So, the required no. is 37422.

(iii) 70975 M

Sum of odd place digits $= M + 7 + 0 = M + 7$

Sum of even place digits $= 5 + 9 + 7 = 21$

$21 - (M + 7) = 21 - 7 - M = 14 - M$

The no. is divisible by 11 if, $14 - M = 11$

$m = 3$

So, the required no. is 709753.

(iv) 14M75

Sum of odd place digits $= 5 + M + 1 = 6 + M$

Sum of even place digits $= 7 + 4 = 11$

$11 - (6 + M) = 11 - 6 - M = 5 - M$

The no. is divisible by 11 if, $5 - M = 0$

$M = 5$

So, the required no. is 14575.