

INTEGRATED

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Class: VIII, MATHEMATICS

08. DIVISIBILITY RULES

TEACHING TASK (JEE MAINS)

01. B) $7380 = 7+3+8+0 = 18$, divisible by 9
Ans: B

02. B) $(4+2) - 6 = 0$
Ans: B

03. D) 1617 divisible by 7, not by 2
Ans: D

04. 36
Ans: C

05. C) 246
Ans: C

06. D) $4620 = (4+2) - (6+0) = 6-6 = 0$
Ans: D

07. ⑥ ④) $6789 \begin{array}{r} 66 \\ \hline 18 \\ 11 \\ \hline 79 \\ 77 \\ \hline 2 \end{array}$ \therefore Remainder = 2
Ans: 2

08. D) 972
Ans: D

09. Three digit numbers which are divisible by 5 and 9 \rightarrow 135, 180, 225, 495, ...
Sum of the digits are either 9 or 18
Ans: D

10.	Conceptual	② Ans. D
11.	2	Ans. B
12	49, 63, 77	Ans. D
13	Conceptual	Ans. B

JEE ADVANCED LEVEL

14.	B) $2145 = (2+4) - (1+5) = 0$ C) $4620 = (4+2) - (6+0) = 0$	Ans. B, C
15	A) <u>5240</u> B) <u>6016</u> C) <u>7328</u>	Ans. A, B, C
16	A) 162 B) 234 C) 64	Ans. A, B
17	A) 80 B) 64	Ans. A, D
18	<u>Statement I</u> : Mathematical (True) <u>Statement II</u> : Conceptual (True)	Ans. A
19	<u>Statement I</u> : Conceptual (True) <u>Statement II</u> : Conceptual (True)	Ans. A
20	<u>Assertion</u> : 1210 is divisible by both 10 and 5 (False) <u>Reason</u> : Conceptual (True)	Ans. D
21.	<u>Assertion</u> : Conceptual (True) <u>Reason</u> : Conceptual (True)	Ans. A
22	Yes	Ans. A

23 $1071 = 1+0+7+1 = 9$, divisible by 3 (3)
Hence 1071 is divisible by 3 Ans: A

24 1071 is divisible by both 3 and 7 Ans: A

25 430 Ans: B

26. A) 444, Ans: A

27 1000 Ans: 1000

28 $3x1 \rightarrow$ divisible by 11
 $\Rightarrow (3+1) - x = 0$ or multiple of 11
 $\Rightarrow 4 - x = 0$ or multiple of 11
 $\Rightarrow x = 4$
Ans: 4

29. 154 Ans: 154

30. 100 Ans: 100

31. 104 Ans: 104

32 a) 728 \rightarrow divisible by 8 (Q)
b) 275 \rightarrow " " 5 (P)
c) 1089 \rightarrow " " 11 (R)
d) 246 \rightarrow " " 3 (S) Ans: Q, P, R, S

33 a) 450 \rightarrow divisible by 10 (P)
b) 732 $\rightarrow 7+3+2=12 \rightarrow$ divisible by 3 (Q)
c) 728 \rightarrow divisible by 4 (R)
d) 84 \rightarrow Even, $8+4=12$, divisible by 6 (S)
Ans: P, Q, R, S

LEARNERS TASK (CQ's) (4)

01	5 only	Ans: A
02	20	Ans: C
03	6	Ans: C
04	Conceptual	Ans: B
05	Conceptual	Ans: A
06	Conceptual	Ans: B
07	2, 5 and 10	Ans: B
08	3, 9	Ans: D
09.	$901351 \Rightarrow (9+1+5) - (0+3+1) = 15-4 = 11$,	Ans: B
10.	508158 is divisible by 7	Ans: B
11.	0	Ans: D
12.	2, 4	Ans: D
13	11	Ans: A
14	0	Ans: A
15	112, 126, 154	Ans: D

JEE MAINS LEVEL

01.	$A) 1430 = (1+3) - (4+0) = 0 \checkmark$ $B) 27313 = (2+3+3) - (7+1) = 0 \checkmark$ $C) 2024 = (2+2) - (0+4) = 0 \checkmark$	Ans: D
02	1002, 1008 \rightarrow divisible by 6	Ans: D
03	Both 3 and 9	Ans: C

04	9999 \rightarrow divisible by 3 and 9	(5) Ans: C
05	Conceptual	Ans: B
06	3017, 3430	Ans: D
07	Conceptual	Ans: B
08	3940	Ans: C
09	8449,	Ans: A
10.	<p>Let the number be of the form</p> $n = 6k + 3, \text{ (This no. is divisible by 6 leaving remainder 3)}$ <p>Squaring on both sides</p> $n^2 = 36k^2 + 36k + 9$ $= 6(6k^2 + 6k + 1) + 3$ <p>Since $6(6k^2 + 6k + 1)$ is divisible by 6,</p> <p>Hence, n^2 leaves a remainder 3</p>	Ans: D
11.	Sum of its digits is divisible by 9	Ans: C
12	$\frac{248}{11} \rightarrow$ Remainder = 6	Ans: D
13	129	Ans: D
14	18	Ans: A
15	2	Ans: C
16	4830, 1900	Ans: A, C
17	52 <u>4</u> 8, 93 <u>2</u> 4, 17 <u>5</u> 6	Ans: A, B, C

18	5, 3	(6) Ans: A, C
19.	15	Ans: A
20	162, 234, 4122	Ans: A, B, D
21	<u>Statement I</u> : 5248 is divisible by 8 (True) <u>Statement II</u> : Conceptual (True)	Ans: A
22	<u>Statement I</u> : Conceptual (True) <u>Statement II</u> : Conceptual (True)	Ans: A
23	<u>Assertion</u> : 672 is divisible by 2 $672 = 6 + 7 + 2 = 15$ is divisible by 3 \therefore Hence, 672 is divisible by 6 (True) <u>Reason</u> : Conceptual (True)	Ans: A
24	<u>Assertion</u> : 18 is divisible by 6, but not by 12 (False) <u>Reason</u> : Conceptual (True)	Ans: D
25	234 <u>6</u> is divisible by 2 (Yes)	Ans: A
26	$2346 = 2 + 3 + 4 + 6 = 15$, is divisible by 3	Ans: A
27.	Conceptual	Ans: C
28	$mn = 64$, is divisible by 4	Ans: C
29.	$lmn = 704$, is divisible by 8	Ans: D

30	Conceptual \rightarrow divisible by 11	Ans B
31	9996 is divisible by 6	Ans 9996
32	$135x = 1+3+5+x = 9+x = 9+0 = 9$: Smallest number $x = 0$	Ans: 0
33	$d54 \rightarrow$ divisible by 4 $d54 = d+5+4 = 9+d d+9 \rightarrow$ least value of $d = 3+9 = 12 \therefore$ least value of $d = 3$	Ans: 3
34	$lml + llm = \text{---}(l+m) = \text{---}0 \rightarrow$ divisible by 2 least value of $l+m = 0$	Ans: 0
35	a) 918 \rightarrow divisible by 6, 9 (r, q) b) 2750 \rightarrow divisible by 10 (p) c) 672 \rightarrow divisible by 8 8 (s) d) 512 \rightarrow divisible by 8 (s)	Ans: (r, q, s, s)
36	a) 2468 \rightarrow divisible by 2 (p) b) 225 \rightarrow divisible by 3 and 5 (q) c) 120 \rightarrow divisible by 4 and not by 8 (r) d) 96 \rightarrow divisible by 8 (s)	Ans: p, q, r, s

\Rightarrow THE END \leftarrow