

# FUNCTIONS

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## I. SECTION B

19) If the fractional part of the number  $\frac{2^{403}}{15}$  is  $\frac{k}{15}$ , then k is equal to:

( JEE M 2019-9 Jan(M))

- a) 6
- b) 8
- c) 4
- d) 14

20) If the function  $f: \mathbb{R} - \{-1, 1\} \rightarrow A$  defined by  $f(x) = \frac{x^2}{1-x^2}$ , is surjective then A is equal to:

( JEE M 2019-9 Jan(M))

- a)  $\mathbb{R} - \{1\}$
- b)  $(0, \infty)$
- c)  $\mathbb{R} - [-1, 0)$
- d)  $(-1, 0)$

21) let  $\sum_{k=1}^{10} f(a+k) = 16(2^{10}-1)$ , where the function f satisfies  $f(x+y) = f(x)f(y)$  for all natural numbers x, y and  $f(a) = 2$ . then the natural number 'a' is:

( JEE M 2019-9 April(M))

- a) 2
- b) 16
- c) 4
- d) 3