Reader's Sign _____ Date _____

ORANGE

ASSIGNMENT–4

Marks Obtained: _____

Student's Name: _____ Section: _____

Roll Number: _____ Date: _____

A. Fill in the blanks.

1. The approximate distance of the moon from the Earth is 384467000 m and in exponential form this distance can be written as .....
2. The value of $(3^2 - 2^2) \times \left(\frac{2}{3}\right)^{-3}$ is .....
3. If the thickness of one paper is 0.0015 cm, then the height of a bundle of 300 papers placed on each other, is written in exponential form as .....
4. The human body has about 100 billion cells. The number of cells can be written in exponential form as .....
5. The expression for 27^{-2} as a power with the base 3 is .....

B. Label True or False.

1. The value of $\frac{1}{3^2}$ is equal to –9. .....
2. 729 expressed as the power of 3 is 3^6. .....
3. $\left(\left(\frac{1}{2}\right)^3\right)^{-2} - \left(\frac{1}{4}\right)^2 = -63\frac{15}{16}$ .....
4. If the mass of the Earth is 5.97×10^{24} kg and the mass of the Mars is 6.42×10^{29} kg, then the total mass of both the planets is 12.39×10^{53} kg. .....
5. For a fixed base, if the exponent decreases by 2, the number becomes one-hundredth of the previous number. .....

C. Match the following.

Column A	Column B
1. $a^m \times a^n$	(*a*) $\frac{1}{a^m}$
2. $(a^m)^n$	(*b*) a^{m-n}
3. $a^m \div a^n$	(*c*) $(ab)^m$
4. $(a)^{-m}$	(*d*) a^{m+n}
5. $a^m \times b^m$	(*e*) a^{mn}

D. Do as directed.

1. Simplify: (*i*) $\left(\left(\frac{-3}{2}\right)^{-2}\right)^3 \times \left(\frac{1}{3}\right)^{-3} \times 4^{-1} \times \frac{1}{12}$ (*ii*) $(7^{-1} - 5^{-1}) - (4^{-1} - 2^{-1})$
2. (*i*) By what number should $(-24)^{-1}$ be divided so that the quotient may be equal to $(-8)^{-1}$?
   (*ii*) By what number should $(-15)^{-3}$ be multiplied so that that the product may be equal to $(-6)^{-3}$?