

VII - Mathematics Assignment No-02 - Powers and Exponents

Q1. Which is greater (i)  $5^3$  OR  $3^5$

(ii)  $2^6$  OR  $6^2$

Q2. Evaluate (i)  $\left(\frac{3}{5}\right)^4$  (ii)  $\left(-\frac{4}{5}\right)^5$

Q3. Express in power notation and write down the base and power.

(i)  $\frac{49}{81}$

(ii)  $-\frac{8}{27}$

Q4. Simplify  $\left(\frac{2}{3}\right)^4 \times \left(\frac{10}{15}\right)^2 \times \left(\frac{-9}{16}\right)$

Q5. Simplify using laws of exponents

(i)  $a^2 \times a^3 \times a^{-5}$

(ii)  $\frac{a^4 \times a^{-2} \times b^4}{b^2 \times a^0 \times a^{-6}}$

Q6. Simplify using laws of exponents

(i)  $\frac{3^5 \times 2^5 \times 5^2}{2^3 \times 3^2 \times 5^4}$

(ii)  $(10^5 \times 3^2 \times 7^2)^0$

Cont Pg-2

Q7 Simplify by factorising the number into prime factors and using laws of exponents.

(i)  $108 \times 192$

(ii)  $270 \times 1125$

Q8. Find the value of:

(i)  $(243)^{2/5}$

(ii)  $(512)^{-2/9}$

Q9. Simplify:

$(18)^{1/3} \times (768)^{1/3}$

Q10. Simplify:

$$\frac{5^{-2} \times 3^{-3} \times (125)^{2/3}}{(27)^{-2/3} \times (32)^{-1/5}}$$

ANSWERS:

<p>(Q1) (i) <math>3^5 &gt; 5^3</math> (ii) <math>2^6 &gt; 6^2</math></p>	<p>(Q3) (ii) <math>\left(-\frac{2}{3}\right)^3</math> Base = <math>-\frac{2}{3}</math> Power = 3</p>	<p>(Q6) (i) <math>\frac{108}{25}</math> (ii) 1</p>	<p>(Q8) (i) 9 (ii) <math>\frac{1}{4}</math></p>
<p>(Q2) (i) <math>\frac{81}{625}</math> (ii) <math>-\frac{1024}{3125}</math></p>	<p>(Q4) <math>\left(-\frac{4}{81}\right)</math></p>	<p>(Q7) (i) 20736 (ii) 303750</p>	<p>(Q9) 24 (Q10) <math>\left(\frac{2}{3}\right)</math></p>
<p>(Q3) (i) <math>\left(\frac{7}{9}\right)^2</math> <math>B = \frac{7}{9}, P = 2</math></p>	<p>(Q5) (i) 1 (ii) <math>6^2</math></p>		