

VII - Mathematics Assignment No-03 - Exponents and Powers

Q1. Using laws of exponents, simplify

$$\frac{2^3 \times 3^4 \times 4}{3 \times 32}$$

$$Q2 \quad \frac{(5^2)^3 \times 5^4}{5^7}$$

$$Q3 \quad \frac{4^5 \times a^8 \times b^3}{4^6 \times a^7 \times b^2}$$

$$Q4 \quad \left[ \left( -\frac{2}{3} \right)^4 \times \frac{216}{125} \right] \div \left( \frac{6}{5} \right)^2 \times \left( \frac{4}{9} \right)$$

$$Q5. \quad \frac{3^2 + 3^3 + 3^4}{3^1 + 3^2 + 3^3}$$

$$Q6 \quad \frac{12^4 \times 9^3 \times 4}{6^3 \times 8^2 \times 27}$$

$$Q7 \quad \frac{5^8 \times 10^3 \times 2^6}{8 \times 5^9 \times 4}$$

Cont Pg-2

Q8. 
$$\frac{\left(-\frac{3}{4}\right)^4 \times \left(\frac{125}{27}\right)}{\left(\frac{5}{3}\right)^2 \times \left(\frac{9}{16}\right)}$$

Q9. If  $\frac{p}{q} = \left(-\frac{2}{3}\right)^9 \div \left(-\frac{2}{3}\right)^8$ , find the value of  $\left(\frac{p}{q}\right)^2$

Q10. If  $\frac{p}{q} = \left(\frac{3}{4}\right)^{18} \div \left(\frac{3}{4}\right)^{17}$ , the value of  $\left(\frac{p}{q}\right)^3$  is

ANSWERS:

(Q1) 27	(Q5) 3	(Q9) $\frac{4}{9}$
(Q2) 125	(Q6) 162	(Q10) $\frac{27}{64}$
(Q3) $\frac{ab}{4}$	(Q7) 400	
(Q4) $\frac{8}{15}$	(Q8) $\frac{15}{16}$	