Q.1 Simplify x:
$$x = \left(\frac{2}{3}\right)^2 \times 1 = \frac{4}{9}$$

Find x^{-2}:
$$x^{-2} = \left(\frac{4}{9}\right)^{-2} = \left(\frac{9}{4}\right)^2 = \frac{81}{16}$$

Answer: $\boxed{B}$

Q.2 Rewrite 9 as 3^2:
$$(3^2)^m \times 3^2 \times 3^m = 3^{11} \implies 3^{2m} \times 3^{2+m} = 3^{11}$$

Combine the exponents:
$$3^{3m+2} = 3^{11} \implies 3m + 2 = 11 \implies 3m = 9 \implies m = 3$$

Answer: $\boxed{A}$

Q.3 Simplify the expression:
$$\left(\frac{1}{5} \times \frac{1}{3}\right)^{-1} \boldsymbol{\nabla} \cdot \frac{1}{6} = \left(\frac{1}{15}\right)^{-1} \times 6 = 15 \times 6 = 90$$

Answer: $\boxed{A}$

Q.4 Rewrite the expression:
$$\frac{3^{-5} \times 10^{-5} \times 5^3}{5^{-7} \times 6^{-5}} = \frac{3^{-5} \times (2 \times 5)^{-5} \times 5^3}{5^{-7} \times (2 \times 3)^{-5}}$$

Simplify the exponents:
$$= \frac{3^{-5} \times 2^{-5} \times 5^{-5} \times 5^3}{5^{-7} \times 2^{-5} \times 3^{-5}} = \frac{3^{-5} \times 2^{-5} \times 5^{-2}}{5^{-7} \times 2^{-5} \times 3^{-5}} = 5^5$$

Answer: $\boxed{B}$

Q.5 Rewrite the bases:
$$\left(\frac{5^3}{2^3}\right)^x = \left(\frac{2}{5}\right)^{-12} \implies \left(\frac{5}{2}\right)^{3x} = \left(\frac{5}{2}\right)^{12}$$

Equate the exponents:
$$3x = 12 \implies x = 4$$

Answer: $\boxed{B}$

Q.6 Simplify the expression:
$$\left(\frac{2}{5}\right)^{-2} = \left(\frac{5}{2}\right)^2 = \frac{25}{4}$$

The reciprocal is:
$$\frac{4}{25}$$

Answer: $\boxed{A}$

Q.7 Calculate the values:
$$2^{10} = 1024, \quad 10^2 = 100$$

2^{10} is greater. **Answer:** $\boxed{A}$

Q.8 Rewrite y:
$$y = (10^2)^{10} = 10^{20}$$

Compare x and y:
$$x = 10^{100}, \quad y = 10^{20}$$

$x > y$. **Answer:** $\boxed{C}$

Q.9 Combine the exponents:
$$\left(\frac{3}{5}\right)^{3-6} = \left(\frac{3}{5}\right)^{-3} = \left(\frac{3}{5}\right)^{2x-1}$$

Equate the exponents:
$$-3 = 2x - 1 \implies 2x = -2 \implies x = -1$$

Answer: $\boxed{A}$

Q.10 Rewrite in standard form:
$$0.00002 = 2 \times 10^{-5} \text{ m}$$

Answer: $\boxed{B}$

Q.11 Find n:
$$2^n = 1024 \implies 2^n = 2^{10} \implies n = 10$$

Calculate 2^{n-2}:
$$2^{10-2} = 2^8 = 256$$

Answer: $\boxed{B}$

Q.12 Simplify each term:
$$\left(x^{a-b}\right)^{a+b} \cdot \left(x^{b-c}\right)^{b+c} \cdot \left(x^{c-a}\right)^{c+a} = x^{(a-b)(a+b)} \cdot x^{(b-c)(b+c)} \cdot x^{(c-a)(c+a)}$$

Expand the exponents:
$$= x^{a^2-b^2} \cdot x^{b^2-c^2} \cdot x^{c^2-a^2} = x^{a^2-b^2+b^2-c^2+c^2-a^2} = x^0 = 1$$

Answer: $\boxed{B}$

Q.13 Simplify each term:

$$\left(\frac{1}{2}\right)^{-2} = 2^2 = 4, \quad \left(\frac{1}{3}\right)^{-2} = 3^2 = 9, \quad \left(\frac{1}{4}\right)^{-2} = 4^2 = 16$$

Add the results:

$$4 + 9 + 16 = 29$$

Answer: $\boxed{A}$

Q.14 Rewrite 9 as 3^2:

$$3^x = (3^2)^{x-2} \implies 3^x = 3^{2x-4}$$

Equate the exponents:

$$x = 2x - 4 \implies x = 4$$

Calculate 2^x:

$$2^4 = 16$$

Answer: $\boxed{B}$

Q.15 Simplify the expression:

$$\frac{(2^3)^2 \times 5^2}{8^2 \times 25} = \frac{2^6 \times 5^2}{(2^3)^2 \times 5^2} = \frac{2^6 \times 5^2}{2^6 \times 5^2} = 1$$

Answer: $\boxed{A}$