Percentage

EXERCISE 16(A)

Question 1.
Express each of the following statements in the percentage form :
(i) 13 out of 20
(ii) 21 eggs out of 30 are good

Solution:

(*i*) 13 out of 20

$$\frac{13}{20}\times 100 = 13 \times 5 = 65\%$$

(*ii*) 21 eggs out of 30 are good

$$\frac{21}{30}\times 100 = 7 \times 10 = 70\%$$

$\therefore$ 70% one good

Question 2.
Express the following fractions as percent :

(*i*) $\frac{3}{200}$ (*ii*) $\frac{5}{6}$

(*iii*) $\frac{65}{80}$ (*iv*) $\frac{2}{3}$

Solution:

(*i*) $\frac{3}{200}\times 100 = \frac{3}{2} = 1\frac{1}{2} = 1{\cdot}5\%$

(*ii*) $\frac{5}{6}\times 100 = \frac{250}{3} = 83\frac{1}{3}\%$

(*iii*) $\frac{65}{80}\times 100 = \frac{65\times 5}{4} = \frac{325}{4}$

$= 81\frac{1}{4}\%$ or $81{\cdot}25\%$

(*iv*) $\frac{2}{3}\times 100 = \frac{200}{3} = 66\frac{2}{3}\%$

Question 3.

Express as percent:

(i) 0.10

(ii) 0.02

(iii) 0.7

(iv) 0.15

(v) 0.032

Solution:

$$(i)\ 0{\cdot}10 = \frac{10}{100} \times 100 = \mathbf{10\%}$$

$$(ii)\ 0{\cdot}02 = \frac{2}{100} \times 100 = \mathbf{2\%}$$

$$(iii)\ 0{\cdot}7 = \frac{7}{10} \times 100 = \mathbf{70\%}$$

$$(iv)\ 0{\cdot}15 = \frac{15}{100} \times 100 = \mathbf{15\%}$$

$$(v)\ 0{\cdot}032 = \frac{32}{1000} \times 100 = \mathbf{3{\cdot}2\%}$$

Question 4.

Convert into fractions in their lowest terms:

(i) 8%

(ii) 20%

(iii) 85%

(iv) 250%

(v) $12\frac{1}{2}$ %

Solution:

$$(i)\ 8\% = \frac{8}{100} = \frac{2}{25}$$

$$(ii)\ 20\% = \frac{20}{100} = \frac{1}{5}$$

$$(iii)\ 85\% = \frac{85}{100} = \frac{17}{20}$$

$$(iv)\ 250\% = \frac{250}{100} = \frac{10}{4} = \frac{5}{2} = 2\frac{1}{2}$$

$$(v)\ 12\frac{1}{2}\% = \frac{25}{2}\% = \frac{25}{2 \times 100} = \frac{1}{8}$$

Question 5.

Express as decimal fractions :

(i) 25%

(ii) 108%

(iii) 95%

(iv) 4.5%

(v) 29.2%

Solution:

$$(i)\ 25\% = \frac{25}{100} = \frac{1}{4} = \mathbf{0{\cdot}25}$$

$$(ii)\ 108\% = \frac{108}{100} = \frac{54}{50} = \mathbf{1{\cdot}08}$$

$$(iii)\ 95\% = \frac{95}{100} = \mathbf{0{\cdot}95}$$

$$(iv)\ 4{\cdot}5\% = \frac{45}{10\times100} = \frac{45}{1000} = \mathbf{0{\cdot}045}$$

$$(v)\ 29{\cdot}2\% = \frac{292}{10\times100} = \frac{292}{1000} = \mathbf{0{\cdot}292}$$

Question 6.

Express each of the following natural numbers as percent :

(i) 7

(ii) 2

(iii) 19.5

(iv) 5.37

Solution:

$$(i)\ 7 \times 100 = \mathbf{700\%}$$

$$(ii)\ 2 \times 100 = \mathbf{200\%}$$

$$(iii)\ 19.5 = \frac{19.5}{10} \times 100\% = 1950\%$$

$$(iv)\ 5.37 = \frac{537}{100} \times 100\% = 537\%$$