Exercise 5.1

1. ***The price of a bicycle is Rs. 3500. If 16% sales tax is charged, then calculate the amount of sale tax on 50 such bicycles.***

Solution:-

Price of one bicycle = Rs. 3500

Price of 50 bicycles = 3500×50

= 175000

Rate of sales tax = 16%

$$= \frac{16}{100} \times 175000$$

= Rs. 28000

2. ***If the price of an air conditioner is Rs. 40,000, then work out the amount of sale tax on it at the rate of 16%. Also calculate the price of air conditioner without sales tax.***

Solution:-

(Price of an air conditioner with tax) = Rs. 40,000

Rate of sales tax = 16%

amount of sales tax = ?

without sales tax, price of air conditioner = ?

Let Price = Rs. 100

Rate of sales tax = 16%

Price including sales tax = 100 + 16 = Rs. 116

If price with sales tax Rs. 116

then without sales tax cost = Rs. 100

If price with sales tax Rs. 40,000 $= \frac{100}{116} \times 40,000$

then without sales tax cost

= Rs. 34,482.76

= 40,000 - 34482.76

= Rs. 5517.24

3. ***The price of two cars of 1300 cc and 1600 cc without excise duty are 6,00,000 and Rs. 8,00,000 respectively. If the excise duty on these two are 200% and 250% respectively. Find the prices of the two cars inclusive duties.***

Solution:-

Price of 13 cc car = 6,00,000

Let cost = Rs. 100

Excise duty = 200%

price with exise duty = 100 + 200

If price is Rs. 100 then price

with excise duty = Rs. 300

If price is 6,00,000 then price $= \frac{300}{100} \times 6,00,000$

with excise duty

= Rs. 18,00,000

Cost of 1600 cc = Rs. 8,00,000

Let price = Rs. 100

Excise duty = 250%

Price with excise duty = 100 + 250

If price is Rs. 100 then price

with excise duty = Rs. 350

If price is 8,00,000 then $= \frac{350}{100} \times 8,00,000$

price including with excise duty = Rs. 28,00,000

4. ***The annual price of a house and price of land is Rs. 15,00,000 and Rs. 20,00,000 respectively. Find the property tax on each of these two at the rate of 16%.***

Solution:-

Annual price of a house = Rs. 15,00,000

Rate of property tax = 16%

Let annual income = Rs. 100

Property tax = Rs. 16

Annual income tax on Rs. 100 = Rs. 16

$$\text{Annual income tax on Rs. 15,00,000} = \frac{16}{100} \times 15,00,000$$

$$= \text{Rs. } 2,40,000 \quad (i)$$

Annual income on land = Rs. 20,00,000

Rate of property tax = 16%

Let annual income = Rs. 100

Property tax = Rs. 16

Annual income tax on Rs. 100 = Rs. 16

$$\text{Annual income tax on Rs. 20,00,000} = \frac{16}{100} \times 20,00,000$$

$$= \text{Rs. } 3,20,000 \quad (ii)$$

5. ***The total taxable income of two persons is Rs. 2,50,000 and Rs. 3,10,000 respectively. Work out the income tax for each of them @ 4.5%.***

Solution:-

1st person taxable income = Rs. 2,50,000

Rate of tax = 4.5%

Let taxable income = Rs. 100

$$\text{If Rs. 100 is taxable income then income tax} = \frac{4.5}{100} \times 2,50,000$$

$$\text{If Rs. 2,50,000 is taxable income then income tax} = \frac{45}{10 \times 100} \times 2,50,000$$

Taxable income of 2nd person = Rs. 3,10,000

Rate of income tax = Rs. 4.5%

Let taxable income = 100

Tax = 4.5

If taxable income is Rs. 100

then incometax = Rs. 4.5

If taxable income is Rs. 3,10,000 then incometax $= \frac{4.5}{100} \times 3,10,000$

$$= \frac{45}{10 \times 100} \times 3,10,000$$

= Rs. 13950 *(ii)*

6. ***The total taxable income of a person is Rs. 4,30,000. If he is given rebate Rs. 3000 on the tax chargeable, then work out the amount he has to pay as an income tax @ 4.5%.***

Solution:-

Annual income = Rs. 4,30,000

Rebate on tax = Rs. 3000

Rate of income tax = 4.5%

Income tax on Rs. 100 = Rs. 4.5

Income tax on Rs. 4,30,000 $= \frac{4.5}{100} \times 4,30,000$

$$= \frac{45}{10 \times 100} \times 4,30,000$$

Amount of income tax = Rs. 19350

Rebate on income tax = Rs. 3000

Paid income tax = 19350 - 3000

= Rs. 16350

7. *If the total annual income of a person is Rs. 6,25,000 with exemption of amount of Rs. 1,50,000, then find the tax chargeable @ 4.5%.*

Solution:-

Annual income = Rs. 6,25,000
Amount of rebate = Rs. 1,50,000
Rate of income tax = 4.5%
Taxable income = Income - Rebate
= 6,25,000 - 1,50,000
= Rs. 4,75,000

Income tax on Rs. 100 = Rs. 4.5

$$\text{Income tax on Rs. } 4,75,000 = \frac{4.5}{100} \times 4,75,000$$

$$= \frac{45}{10 \times 100} \times 4,75,000$$

= Rs. 21375

8. *The total income of a person is Rs. 5,25,000. Whereas the exemption is Rs. 1,50,000. Work out the tax payable @ 4.5% along with the income tax rate, if Rs. 10,000 has already been deducted at source as income tax.*

Solution:-

Total annual amount = Rs. 5,25,000
Exempted amount = Rs. 1,50,000
Taxable income = 5,25,000 - 1,50,000
= Rs. 375000

Tax rate = 4.5%

$$\text{Total tax payable} = \frac{4.5}{100} \times 375000$$

$$= \frac{45 \times 375000}{10 \times 100}$$

= Rs. 16875

Tax deducted at source = Rs. 10,000
Tax = 16875 - 10,000
= Rs. 6875

Exercise 5.2

1. ***In the following the gas meter reading has been given. Complete the gas bills with the help of the slabs given in the unit. Also include the meter rent and GST.***

Solution:-the table available in text book

(i) $3.0756\ Hm^3$ **(ii)** $4.285\ Hm^3$ **(iii)** $2.796\ Hm^3$
(iv) $1.378\ Hm^3$ **(v)** $5.235\ Hm^3$ **(vi)** $4.665\ Hm^3$

1 (i)

Amount of Gas $= 3.0756\ Hm^3$

Gas slab rates for domestic purpose are

Gas charges $3Hm^3$ = Rs. 325.48 *(i)*

Gas charges $0.756Hm^3$ = Rs. 80.65 *(ii)*

Meter Rent = Rs. 120.00 *(iii)*

Total amount (i)+ (ii)+(iii) = Rs. 526.13

$$\text{GST @ 16\%} = \frac{16}{100} \times 526.13$$

= Rs. 84.18

Current bill = 526.13 + 84.18

= Rs. 610.31

1 (ii)

Amount of Gas $= 4.285\ Hm^3$

from the given table

Gas charges $4Hm^3$ = Rs. 423.42 *(i)*

Gas charges $.285\ Hm^3$ = Rs. 80.65 *(ii)*

Meter Rent = Rs. 120.00 *(iii)*

Total amount *(i)+ (ii)+(iii)* = Rs. 624.07

$$\text{GST @ 16\%} = \frac{16}{100} \times 624.07$$

= 99.85

Current bill = 624.07 + 99.85

= Rs. 723.92

1 (iii) Amount of Gas = 2.796 Hm^3

from the given table

Gas charges 2 Hm^3 = Rs. 153.73 *(i)*

Gas charges .796 Hm^3 = Rs. 84.45 *(ii)*

Meter Rent = Rs. 120.00 *(iii)*

Total amount *(i)+(ii)+(iii)* = Rs. 358.18

$$\text{GST @ 16\%} = \frac{16}{100} \times 358.18$$

= Rs. 57.31

Current bill = 358.18 + 57.31

= Rs. 415.49

1 (iv) Amount of Gas = 1.378 Hm^3

from the given table

Gas charges 1Hm^3 = Rs. 84.45 *(i)*

Gas charges .378 Hm^3 = Rs. 80.65 *(ii)*

Meter Rent = Rs. 120.00 *(iii)*

Total amount *(i)+(ii)+(iii)* = Rs. 285.10

$$\text{GST @ 16\%} = \frac{16}{100} \times 285.10$$

= Rs. 45.62

Current bill = 285.10 + 45.62

= Rs. 330.72

1 (v) Amount of Gas = 5.235 Hm^3

from the given table

Gas charges in 5 Hm^3 = Rs. 550.44 *(i)*

Gas charges in .235 Hm^3 = Rs. 80.65 *(ii)*

Meter Rent = Rs. 120.00 *(iii)*

Total amount *(i)+(ii)+(iii)* = Rs. 751.09

$$\text{GST @ 16\%} = \frac{16}{100} \times 751.09$$

= Rs. 120.17

Current Bill = 751.09 + 120.17

= Rs. 871.26

1 (vi) Amount of Gas = 4.665 Hm^3

from the given table

Gas charges in 4 Hm^3 = Rs. 423.42 *(i)*

Gas charges in .665 Hm^3 = Rs. 84.45 *(ii)*

Meter Rent = Rs. 120.00 *(iii)*

Total amount *(i)+ (ii)+(iii)* = Rs. 627.87

$$\text{GST @ 16\%} = \frac{16}{100} \times 627.87$$

= Rs. 100.46

Current Bill = 627.87 + 100.46

= Rs. 728.33

2. ***In the following the number of units consumed while using electricity are given. Complete the Electricity bills, including the items as well as shown in the example of electricity bill.***

Solution:-

(i) 315 Units (ii) 210 Units (iii) 375 Units (iv) 290 Units

2 (i) Number of units consumed = 315

= 100×2.65 *(i)*

Cost of 100 units @ Rs. 2.65 is cost of per unit = Rs. 265

Cost of next 200 units @ Rs. 3.64 is = 200×3.64

= Rs. 728 *(ii)*

Cost of next 15 units @ Rs. 6.15 is = 15×6.15

= Rs. 92.25 *(iii)*

Total cost of 315 units from *(i) + (ii) + (iii)* = Rs. $\boxed{1085.25}$ *(iv)*

Excise duty @ 1.5% is = Rs. 16.28 *(v)*

Electricity duty = Rs. 65.52 *(vi)*

PTV fee = Rs. 25.00 *(vii)*

Income tax @ 1.6% = 17.36

Total amount = Rs. 1206.41

(iv)+ (v) + (vi) + (vii)

Cost of 315 units = 1085.25 (A)

Total amount = 1206.41 (B)

Number of units consumed = 210

2 (ii) Cost of 100 units @ Rs. 2.65 is = 100×2.65

Cost of Next 110 units @ 3.64 per unit = Rs. 265 *(i)*

= 100×3.64

= Rs. 400.40 *(ii)*

Total amount 210 units (i)+(ii) = Rs. *665.40*

Excise duty @ 1.5% is = 9.98

Electricity duty = 62.52

PTV fee = 25.00

Income tax @ 1.6% = 10.65

Total amount = Rs. 1827.9

2 (iii) Number of units consumed = 375

Cost of 1st 100 units @ 2.65 is = 100×2.65

= Rs. 265 *(i)*

Cost of next 200 units @ 3.64 per unit is = 200×3.64

= Rs. 728 *(ii)*

Cost of next 75 units @ 6.15 per unit is = 75×6.15

= Rs. 461.25 *(iii)*

Cost of 375 units from *(i) + (ii) + (iii)* = Rs. *1454.25* *(iv)*

Excise duty @ 1.5% is = Rs. 21.81 *(v)*

Electricity duty = Rs. 62.52 *(vi)*

PTV fee = Rs. 25.00 *(vii)*

Income tax @ 1.6% from Rs. 23.27 *(viii)*

(iv)+(v)+(vi)+(vii)+(viii) Total amount Rs. 1586.85

2 (iv) Number of units consumed = 290

Cost of 1st 100 units @

2.65 per unit is = 100×2.65

= Rs. 265 *(i)*

Cost of next 190 units @

3.64 per unit is = 190×3.64

= Rs. 691.60 *(ii)*

Cost of 290 units *(i)* + *(ii)* = Rs. 956.60 *(iii)*

Excise duty @ 1.5% is = Rs. 14.35 *(iv)*

Electricity duty = Rs. 62.52 *(v)*

PTV fee = Rs. 25.00 *(vi)*

Income tax @ 1.6% is = Rs. 15.31

Total amount (iii)+(iv)+(v)+(vi) = Rs. 1073.78

3. In the following the number of calls made are given. Complete the telephone bill including the items.

(i)	530	(ii)	640	(iii)	750
(iv)	270	(v)	480	(vi)	315

3 (i) Number of calls = 530

Call charges @ Rs. 5 per call = 530×5

= Rs. 2650 *(i)*

$$\text{CED @ 15\%} = \frac{15}{100} \times 2650$$

= Rs. 397.50 *(ii)*

$$\text{W.H tax @ 4\%} = \frac{4}{100} \times 2650$$

= Rs. 106 *(iii)*

Total amount payable

(i) + *(ii)* + *(iii)* = Rs. 3153.50

3 (ii) Solution:

Number of calls = 640

Charges of 640 calls @

Rs. 5 per call = 640×5

= Rs. 3200 *(i)*

$$\text{C.E.D @ 15\% is} = \frac{15}{100} \times 3200$$

$$= \text{Rs. } 480 \qquad (ii)$$

$$\text{W.H tax @ 4\% is} = \frac{4}{100} \times 3200$$

$$\text{Total payable amount} = \text{Rs. } 128 \qquad (iii)$$

$$= \text{Rs. } 3808$$

3 (iii)

$$\text{Number of calls} = 750$$

Charges of 750 calls @

$$\text{Rs. 5 per call} = 750 \times 5$$

$$= \text{Rs. } 3750 \qquad (i)$$

$$\text{C.E.D @ 15\%} = \frac{15}{100} \times 3750$$

$$= \text{Rs. } 562.50 \qquad (ii)$$

$$\text{W.H tax @ 4\% is} = \frac{4}{100} \times 3750$$

$$= \text{Rs. } 150 \qquad (iii)$$

$$\text{Total payable amount} = \text{Rs. } 4462.50$$

3 (iv) $\text{Number of calls} = 270$

Charges of 750 calls @

$$\text{Rs. 5 per call} = 270 \times 5$$

$$= \text{Rs. } 1350 \qquad (i)$$

$$\text{C.E.D @ 15\%} = \frac{15}{100} \times 1350$$

$$= \text{Rs. } 202.50 \qquad (ii)$$

$$\text{W.H Tax @ 4\% is} = \frac{4}{100} \times 1350$$

$$= \text{Rs. } 54 \qquad (iii)$$

$$\text{Total payable amount} = \text{Rs. } 1606.5$$

3 (v) Number of calls = 480

Charges of 480 calls @

Rs. 5 per call = 480×5

= Rs. 2400 *(i)*

C.E.D @ 15% is = $\frac{15}{100} \times 2400$

= Rs. 360 *(ii)*

W.H. Tax @ 4% is = $\frac{4}{100} \times 2400$

= Rs. 96 *(iii)*

Total payable amount = Rs. 2856

3 (vi) Number of calls = 315

Charges of 315 calls @

Rs. 5 per call = 315×5

= Rs. 1575 *(i)*

C.E.D @ 15% is = $\frac{15}{100} \times 1575$

= Rs. 236.25 *(ii)*

W.H. Tax @ 4% is = $\frac{4}{100} \times 1575$

= Rs. 63 *(iii)*

Total payabel amount = Rs. 1874.25

Exercise 5.3

1. ***A lady worker works a six-day week. She starts work at 7.00 am and finishes at 4pm. She has 15 minutes break in the morning and 45 minutes break in the afternoon. How long does she actually work in a week and how much she is paid, if the rate of payment is Rs. 40 per hour?***

Solution:

Numbers of hours from 7am to 4 pm = 9 hours

Break = 15 + 45

= 60 mints

= 1 hour

= 9 - 1

therefore, actually daily working hours = 8 hours

Number of hours works in 6 days = 8 × 6

= **48 hours**

She works 48 hours in a week

Rate of payment per hour = Rs. 40

Rate of payment 48 hour = 40 × 48

= **Rs. 1920**

2. ***Khalid works 6 day-week. Find his gross monthly wage, if his rate of pay is Rs. 200 per day.***

Solution:

Number of weeks in a month = 6

Number of days in a week = 4

Khalid's total working days of a month = 6 × 4

= 24 days

Daily wages = Rs. 200

24 days wages = 200 × 24

= **Rs. 4800**

3. ***Aslam gets paid Rs. 70 per hour for his normal working 8 hours daily (6 day week). The rate of overtime is 1.5 of Rs. 70 per hour. If he works 40 hours as overtime, then work out his gross monthly pay.***

Solution:

Aslam's working hours = 8 hours
Number of days Aslam works in a week = 6 days
Total weeks in a month = 4
Total number of days = 6 × 4
Aslam works in a month = 24 days
Number of hours = 24 × 8
Aslam works in a month = 192 hours
Payment of 1 hour working = Rs. 70
Payment of 192 hours working = 70 × 192
= Rs. 13440 *(i)*
extra wages per hour = 1.5 × 70
= Rs. 105
Number of hours Aslam works as overtime = 40 hours
Over time payment = 105 × 40
= Rs. 4200 *(ii)*
Gross payment = 13440 + 4200
= **Rs. 17640**

4. ***Calculate the gross monthly pay of a person, if his basic pay is Rs. 18000, house rent allowances is Rs, 3500, dearness allowances is Rs. 3000, conveyance allowance is Rs. 1500 and medical allowance is Rs. 500.***

Solution:

Basic salary = Rs. 18000 *(i)*
house allowance = Rs. 3500 *(ii)*
dearness allowance = Rs. 3000 *(iii)*
conveyance allowance = Rs. 1500 *(iv)*
Medical allowance = Rs. 500 *(v)*
= 18000 + 3500 + 3000 + 1500 + 500

Gross monthly income = **Rs. 26500**

5. ***If gross pay of a person is Rs. 45,000, then calculate his net take home salary, after deductions of Rs. 400 as income tax, Rs. 1200 as benevolent fund, Rs. 1500 as G.P found and Rs. 400 as group insurance.***

Solution:

Gross income = Rs. 4500 *(i)*
Deduction = Rs. 400 *(i)*
Benevolent funds = Rs. 1200 *(ii)*
G.P funds = Rs. 1500 *(iii)*
amount of group insurance = Rs. 400 *(iv)*
Total payment of deduction = Rs. 3500
Net income = Gross Salary - total dedcution
= 45000 - 3500
= **Rs. 41,500**

6. ***Noman works in a factory where the basic hourly rate is Rs. 50 for a 35 hour week. An over time is paid at time and - a - half. How much will he earn in a week when he works for:***
(i) 38 hours (ii) 48 hours (iii) 50 hours

Solution:

Working time in a week = 35 hours
Wages of 1 hour work = Rs. 50
Wages of 35 hours work = 35 × 50
= Rs. 1750 (A)
Wages of over time work = 1.5 × 50
= Rs. 75

(1st condition)

over time = 38 - 35
= 3 hours
Total wages of over time = 75 × 3
= Rs. 225 (B)
Total wages A + B = 1750 + 225

2nd condition

= 1975

= **13 hours**

wages of extra time = 75 × 13

= Rs. 975 (C)

Total wages = 1750 + 975

= **Rs. 2725**

3rd condition

over time = 50 - 35

= 15 hours

wages of over time = 75 × 15

= Rs. 1125

Total wages = 1750 + 1125

= **Rs. 2875**

7. ***Abdullah's pay slip showed that he had worked 6 hours over time in addition to his basic 36 hours week. If his basic rate to pay is Rs. 60 and overtime is paid at time and a - half. Find his gross pay for the month.***

Solution:

Time works in a week = 36 hours

wages for 1 hour = Rs. 60

wages of 1 week = 36 × 60

= Rs. 2160

Total weeks in a month = 4

Monthly Salary = 2160 × 4

= **Rs. 8640** **(A)**

Over time for 1 hour = 6 hours

Wages of 1 over time hour = 1.5 × 60

= Rs. 90

Wages of 1 hour = 90 × 6

= 540

Total weeks in a month = 4

over time wages = 540 × 4

= **Rs. 2160** **(B)**

= 8640 + 2160

Total = Rs. 10800