**Commercial Mathematics**

1. For the following transaction within Delhi, fill in the blanks to find the amount of bill :

MRP = Rs. 12,000, Discount % = 30%, GST = 18%

Discount =

Selling price (discounted value) =

CGST =

SGST =

IGST =

Amount of Bill =

ANSWER ;  Rs. 9912

1. For the following transaction from Delhi to Jaipur, fill in the blanks to find the amount of bill :

MRP = Rs. 50,000, Discount % = 20%, GST = 28%

Discount =

Selling price (discounted value) =

CGST =

SGST =

IGST =

Amount of Bill =

ANSWER ; Rs. 51,200

1. A computer mechanic in Delhi charges repairing cost from five different persons A, B, C, D and E with certain discounts. The repairing costs and the corresponding discounts are as given below :

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Name of the person** | **A** | **B** | **C** | **D** | **E** |
| **Repairing cost (in Rs.)** | 5500 | 6250 | 4800 | 7200 | 3500 |
| **Discount %** | 30 | 40 | 30 | 20 | 40 |

If the rate of GST is 18%, find the total money (including GST) received by the mechanic.

ANSWER : Rs. 22,207.6

1. Find the amount of bill for the following intra-state transaction of goods/services. The GST rate is 5%.

|  |  |  |
| --- | --- | --- |
| **Quantity (no. of items)** | **MRP of each item (in Rs.)** | **Discount %** |
| 18 | 150 | 10 |
| 24 | 240 | 20 |
| 30 | 100 | 30 |
| 12 | 120 | 20 |

ANSWER :  Rs. 10,804.5O

1. Find the amount of bill for the following inter-state transaction of goods/services. The GST rate is 18%.

|  |  |  |  |
| --- | --- | --- | --- |
| **Quantity (no. of items)** | 35 | 47 | 20 |
| **MRP of each item (in Rs.)** | 420 | 600 | 350 |
| **Discount %** | 10 | 10 | 20 |
|  |  |  |  |

ANSWER : Rs. 52,167.8O

1. Find the amount of bill for the following intra-state transaction of goods/services.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **MRP (in Rs.)** | 12,000 | 15,000 | 9500 | 18,000 |
| **Discount %** | 30 | 20 | 30 | 40 |
| **CGST %** | 6 | 9 | 14 | 2.5 |

ANSWER: Rs. 43,420

1. A dealer in Mumbai supplied an item at the following prices to a dealer in Delhi. Find the total amount of the bill.

|  |  |  |  |
| --- | --- | --- | --- |
| **Rate per piece (in Rs.)** | **Quantity (no. of pieces)** | **Discount %** | **SGST %** |
| 180 | 10 | Net | 9 |
| 260 | 20 | 20 | 9 |
| 310 | 30 | Net | 9 |
| 175 | 20 | 30 | 9 |

ANSWER:  Rs. 20,897.8O

1. National Trading Company, Meerut (UP) made the supply of the following goods/services to Samarth Traders, Noida (UP). Find the total amount of bill if the rate of GST = 12%

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Quantity (no. of pieces)** | 20 | 30 | 12 | 40 |
| **MRP (in Rs. per piece)** | 225 | 320 | 300 | 250 |
| **Discount %** | 40 | 30 | 50 | 40 |

ANSWER : Rs. 19,286.4O

1. Mr. Malik went on a tour to Goa. He took a room in a hotel for two days at the rate of Rs. 5000 per day. On the same day, his friend John also joined him. Hotel provided an extra bed charging Rs. 1000 per day for the bed. How much GST, at the rate of 28% is charged by the hotel in the bill to Mr. Malik for both the days?

ANSWER: Rs. 3360.

1. Fill in the blanks :

When the goods/services are sold for Rs. 15,000 under intra-state transaction from station A to station B and the rate of GST is 12%.

As per GST System

S.P. at station A =

CGST = 6% of 15,000 =
SGST = 6% of 15,000 =

C.P. at station B =

If profit = Rs. 5000
S.P. at station B =
Now the same goods/services are moved under inter-state transaction from station B to station C and the rate of tax is 12%.

GST =

C.P. at station C =

**SOLUTION**

When the goods/services are sold for Rs. 15,000 under intra-state transaction from station A to station B and the rate of GST is 12%.

As per GST System

1. S.P. at station A = Rs. 15,000
2. CGST = 6% of 15,000 = Rs. 900
SGST = 6% of 15,000 = Rs. 900
3. C.P. at station B = Rs. 15,000
4. If profit = Rs. 5000
S.P. at station B = 15,000 + 5000 = Rs. 20,000
Now the same goods/services are moved under inter-state transaction from station B to station C and the b rate of tax is 12%.
5. GST = 12% of 20,000 = Rs. 2400
6. C.P. at station C = Rs. 20,000
7. Goods/services are sold from Agra (U.P.) to Kanpur (U.P.) for Rs. 20,000 and then from Kanpur to Jaipur (Rajasthan). If the rate of GST is 18% and the profit made at Kanpur is Rs. 5000, find:

i.the net GST payable by the dealer at Kanpur.

ii. the cost of goods/services at Jaipur.

When the product is sold from Agra to Kanpur (intra-state transaction)

For the dealer in Agra :

S. P. in Agra = Rs. 20,000

CGST = 9% of Rs. 20,000 = 

SGST = 9% of Rs. 20,000 = 

When product is sold from Kanpur to Jaipur (inter-state transaction)

For the dealer in Kanpur

Input-tax credit = 1800 + 1800 = Rs. 3600

C. P. = Rs. 20,000 and Profit = Rs. 5000

S.P. = 20,000 + 5000 = Rs. 25,000

IGST = 18% of 25,000 = Rs. 4500

1. Net GST paid by the dealer at Kanpur
= Output GST - Input GST
= 4500 - 3600
= Rs. 900
2. The cost of goods/services at Jaipur
= S. P. in Agra + IGST
= 25,000 + 18% of 25000
= 25,000 + 4500
= Rs. 29,500

**Mensuration formulas**

| **Shape Name** | **TSA** | **LSA (or CSA)** | **Volume** |
| --- | --- | --- | --- |
| Cube | 6a2 | 4a² | a3 |
|  Cuboid | 2 (lb +bh +hl) | 2h (l + b) | l × b × h |
| Cone | πr (r + l) | Πrll2= r2 + h2 | (⅓) × πr2h |
| Cylinder | 2πrh + 2πr2 | 2πrh | πr2 h |
| Hallow cylinder | 2π(R+r)h + 2π(R2-r2) | 2π(R+r)h | π(R2-r2)h |
|  Sphere | 4πr2 | 4πr2 | (4/3) × πr3 |
| Hallow sphere | 4π (r2 +R2) | 4π (r2 +R2) |  (4/3) × π(R3-r3) |
| Hemisphere | 3πr2 | 2πr2 | (⅔) × πr3 |
| Hallow Hemisphere | 2π(r2 +R2) + π(R2-r2) | 2π(r2 +R2) | (⅔) × π(R3-r3) |

**SHARES AND DIVIDENDS**

Investment = market value x number of shares

Number of shares = investment/market value

Market value = investment/number of shares

 Premium (N.V<M.V)

Discount (N.V> M.V)

Market value = nominal value + preminum

Market value = nominal value + preminum% of nominalvalue

Market value = nominal value –discount

Market value = nominal value –discount% of nominal value

Dividend or income = dividend% x number of shares x nominal value

Proceeds (selling price) = market value x number shares sold

Percentage return = $\frac{Income}{investment}$ x 100

RECURRING DEPOSIT

Actual Principal = monthly deposit or principal X number of months

Interest = monthly depositor principal x $\frac{n\left(n+1\right)}{2 x 12}$ x $\frac{r}{100}$

Maturity value = Actual Principal + Interest