



INDIAN SCHOOL AL WADI AL KABIR

Class XI Applied Mathematics Worksheet- Basics of Financial Mathematics 07.02.2021

Note:

Refer the following table and answer the questions from 1 to 3:

Income tax slab for A Y 2020-2021:

Individual tax payers below the age 60 years		Individual tax payers 60 years old or more but less than 80 years.	
Taxable income	Income tax	Taxable income	Income tax
Up to ₹2,50,000	Nil	Up to ₹3,00,000	Nil
₹2,50,001 to ₹5,00,000	5% of taxable income exceeding ₹2, 50, 000.	₹3,00,001 to ₹5,00,000	5% of taxable income exceeding ₹2, 50, 000.
₹5,00,001 to ₹10,00,000	₹12500+20% of taxable income exceeding ₹5, 00, 000.	₹5,00,001 to ₹10,00,000	₹10,000+20% of taxable income exceeding ₹5,00, 000.
Above ₹10, 00,000	₹1,12,500 + 30% of taxable income exceeding ₹10, 00,000	Above ₹10, 00,000	₹1,10,000 + 30% of taxable income exceeding ₹10, 00,000
Health and Education Cess		4% of income tax	

Exemptions and deductions:

1. HRA.
2. standard deduction of ₹50, 000 (for salaried individual).
3. Up to ₹ 1,50,000 under section 80c (LIC, PR+F, Tuition fee of two children, NPS, NSC).
4. Up to ₹ 25, 000 under section 80D (Medical insurance premium).
5. Educational loan interest deduction under section 80E (maximum for 8 years).
6. Donations under 80G. U
7. Up to ₹ 10,000 on SB interest under rule 80TTA.
8. Up to ₹ 2, 00, 000 under section 24 for home loan interest.
9. Tax rebate under 87A up to ₹ 12, 500 for taxable income up to ₹ 5, 00, 000.

Q.1.	In financial year 2019-20, Mr. Patil's (age 40 years) gross income was ₹6, 98, 000(Exclusive of HRA). He deposited ₹ 6000 per month in NPS and ₹ 24,900 yearly as LIC premium. He purchased NSC worth ₹40000. He donated ₹ 15000 in Prime minister's Relief Fund. Calculate the income tax paid by Mr. Patil. Ans. Nil
Q.2.	In financial year 2019-20, Mrs. Ani's (age 50 years) gross income was ₹8,85,400(Exclusive of HRA). She deposited ₹ 85000 in NPS and ₹ 38,000 yearly as LIC premium. She purchased NSC worth ₹30000. She paid ₹ 18000 as tuition fee for her daughter. Calculate the income tax paid by Mrs. Ani. Ans: ₹51563

Q.3	<p>In financial year 2019-20, Mr. Ajay's (age 62 years) gross income was ₹7, 58, 000(Exclusive of HRA). He deposited ₹ 7500 per month in GPF and ₹ 23,400 half-yearly as LIC premium. He purchased NSC worth ₹25000. He donated ₹ 20000 to a charitable trust on which 50% deduction is allowed under section 80G. Calculate the income tax paid by Mr. Patil.</p> <p>Ans: ₹20384</p>										
Q4.	<p>Refer the tariff plan given below</p> <p>Fixed charge ₹ 100 per KW /month. Energy Tax: 5% of (Fixed charge + Energy charge). Surcharge :0.25 per unit.</p> <table border="1" data-bbox="167 558 1318 688"> <thead> <tr> <th>Units</th> <th>0-150</th> <th>151-300</th> <th>301-500</th> <th>>500</th> </tr> </thead> <tbody> <tr> <td>Price per unit (₹)</td> <td>₹ 5.5</td> <td>₹ 6</td> <td>₹ 6.5</td> <td>₹ 7</td> </tr> </tbody> </table> <p>The reading of electric meter of Mr. Abhay's house is found to be 5678 units. If the previous month's reading was 4803 units and connection load is 4kw, calculate the electricity bill for the month.</p> <p>Ans: ₹6571.25</p> <p>[Bill amount= Fixed charge + Energy charge + Surcharge + Tax on (fixed charge + energy charge)]</p>	Units	0-150	151-300	301-500	>500	Price per unit (₹)	₹ 5.5	₹ 6	₹ 6.5	₹ 7
Units	0-150	151-300	301-500	>500							
Price per unit (₹)	₹ 5.5	₹ 6	₹ 6.5	₹ 7							
Q5.	<p>Mr. Roy from Goa consumed 19 m³ of water in one month. Calculate his water bill for that month. Tariff plan is given below:</p> <p>Meter Rent: ₹ 50 and sewerage charge: 25% of water charge:</p> <table border="1" data-bbox="167 1039 1318 1169"> <thead> <tr> <th>Units (m³)</th> <th>Up to 15</th> <th>15-25</th> <th>25-50</th> <th>>50</th> </tr> </thead> <tbody> <tr> <td>Price per unit (₹)</td> <td>₹ 3.5</td> <td>₹ 9</td> <td>₹ 16</td> <td>₹ 25</td> </tr> </tbody> </table> <p>Ans: ₹150.63 (Total bill = Meter rent + water charge + sewerage charge)</p>	Units (m ³)	Up to 15	15-25	25-50	>50	Price per unit (₹)	₹ 3.5	₹ 9	₹ 16	₹ 25
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Price per unit (₹)	₹ 3.5	₹ 9	₹ 16	₹ 25							
Q6.	<p>Mr. Akshay lives in Mumbai and consumes 84SCM gas in 60 days, Calculate his bill amount.</p> <p>Tariff plan: VAT @12.5%</p> <table border="1" data-bbox="167 1394 924 1562"> <thead> <tr> <th>Units (SCM)</th> <th>Up to 0.60 SCM/day</th> <th>0.61 to 1.50 SCM /day</th> </tr> </thead> <tbody> <tr> <td>Price per unit (₹)</td> <td>₹ 29.60</td> <td>₹35.20</td> </tr> </tbody> </table> <p>Ans: ₹3099.60 (Bill amount = Gas charge + vat @12.5%)</p>	Units (SCM)	Up to 0.60 SCM/day	0.61 to 1.50 SCM /day	Price per unit (₹)	₹ 29.60	₹35.20				
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Q7.	<p>A retailer buys a TV for ₹ 25, 000. He marks the price of the TV 20% above his cost price and sells to a customer at 10% discount on the marked price. If the sales are intra-state and rate of GST is 12% find:</p> <p>(i) GST collected by manufacturer from retailer. (ii) The marked price of TV (iii) Consumer's cost price of TV inclusive of tax. (iv) GST paid by the retailer to the central and state governments.</p> <p>Ans. (i) ₹3000 (ii) ₹ 30,000, (iii) ₹30, 240, (iv) ₹ 120+₹120 = ₹ 240</p>										

Q8.	<p>The printed price of a carpet is ₹25000. A wholesaler in Karnataka buys the carpet from a manufacturer in Maharashtra at a discount of 12% on the printed price and then sold the carpet to a retailer in Kerala at 32% above the marked price. If the GST on the carpet is 5% find</p> <p>(i) the price inclusive of GST at which the wholesaler bought the carpet. (ii) the price inclusive of GST at which the retailer bought the carpet. (iii) the tax (under GST) received by the central government.</p> <p>Ans. ₹23100, ₹34650, ₹1650</p>
Q9.	<p>A certain amount of money is invested with a finance company at 8% interest compounded semi-annually. In how many years will the amount be three times the principal amount?</p> <p>Ans. Approx. 13 years.</p>
Q10.	<p>Find the present value of a regular annuity of ₹ 1000 payable for 3 years at 12% per annum compounded annually.</p> <p>Ans: ₹2400 Approx.</p>
Q11.	<p>Find the amount of an annuity of ₹8000 payable at the end of each year for 3 years, if money is worth 8% annum compounded annually.</p> <p>Ans; ₹25971.20.</p>

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