

COMPETITIVE ENTRANCE EXAMINATION INTO HTTTC BAMBILI

SESSION: 2014

LEVEL: 3rd YEAR

OPTION: ACCOUNTANCY

GUIDED SOLUTIONS TO BUSINESS MATHEMATICS 3rd YEAR

1. Calculation of the percentage of his salary goes to the deduction
 $(8000/32000) \times 100 = \underline{\underline{25\% = A}}$
2. The cost of article without tax
 $138000/1.15 = \underline{\underline{120\,000\text{ F} = B}}$
3. B
4. $800(1.05)^n = 2000 \rightarrow (1.05)^n = 2000/800 \rightarrow n \log 1.05 = \log 2.5 \rightarrow n = \underline{\underline{18.78\text{ years} = B}}$
5. A
6. $15 + 15 \times 12\% = \underline{\underline{16.8\text{ F} = B}}$
- 7.

year	1	2	3	4
inflow	60000	80000	50000	20000
Accumulated inflow	60000	140000	190000	210000

100 000 is situated in 140 000 F means that we need to add 40 000 F

$(100\,000 - 60\,000)$ to 60 000 to have 100 000

80 000 = 1 year

40 000 = ?

$(40\,000 \times 1)/80\,000 = 0.5\text{ year}$

$100\,000 = 60\,000 (1\text{ year}) + 40\,000 (0.5\text{ year}) = \underline{\underline{1.5\text{ year} = B}}$

8. If $P = 2 - x$; total revenue = $(2-x) \times \underline{\underline{2x-x^2 = D}}$

9.

$$10. \frac{(10 \times 16) + (25 - 10) \times 6}{25} = \underline{\underline{10 = C}}$$

$$11. 6+3+2+1=12 ; 3+2+1+4 = 10; 2+1+4+2 =9$$

$$\underline{\underline{12, 10, 9 = C}}$$

$$12. 699\,292.45 \frac{1-(1.075)^{-10}}{0.075} = \underline{\underline{4\,800\,000 = B}}$$

$$13. 116588.32 = 87000 (1.05)^n$$

$$1.05^n = \frac{116588.32}{87000} \rightarrow n \log 1.05 = \log \frac{116588.32}{87000}$$

$$n = \underline{\underline{6 \text{ years} = C}}$$

$$14. \text{Amortization} = 3000\,000/5 = 600\,000 ; a_4 = (600000 \times 2) \times 4.25\% + 600\,000 = \underline{\underline{651000 = C}}$$

15. Let the shares be A, B and C

$$A + B + C = 3\,000\,000$$

$$(1.075)^{-(18-12)} = 0.647961548$$

$$(1.075)^{-(18-13)} = 0.696558632$$

$$(1.075)^{-(18-1)} = 0.865332612$$

$$\frac{A}{0.647961548} + \frac{B}{0.696558632} + \frac{C}{0.865332612} = \frac{3000000}{2.209852763}$$

$$= 1357556.508$$

$$A = 1357556.508 \times 0.647961548 = 879677.4164 \text{ F}$$

$$A(1.075)^6 = B(1.075)^5 = C(1.075)^2$$

$$\text{FV1} = 879677.4164 \times (1.075)^6 = \underline{\underline{1357556.57 \text{ F} = A}}$$

$$16. \text{Amount give to the wife} = 600\,000 \times 40\% = 240\,000 \text{ F}$$

$$\text{Amount give by the wife to his sons} = 240\,000 \times 20\% = 48\,000 \text{ F}$$

$$\text{Amount spent by the sons on video clubs} = 48000 \times 30\% = 14\,400 \text{ F}$$

$$\text{Percentage of the manager's salary spent by the sons on video clubs}$$

$$= (14\,400/600000) \times 100 = \underline{\underline{2.4\% = ?}}$$

$$17. \text{The cash price} = (20\,000 - 20\,000 \times 10\%) - (20\,000 - 20\,000 \times 10\%) \times 5\% = 17100$$

$$\text{Percentage} = (17100/20000) \times 100 = \underline{\underline{85.5\% = C}}$$

$$18. \text{Agio} = \frac{600000 \times 90 \times 60}{36000} + 600000 \times 0.5\% = 93\,000$$

$$\frac{600000 \times r \times 60}{36000} = 93000 \quad r = 9.3 = ?$$

19.2,2,3,5,14,18

$$\text{Median} = (3+5)/2 = \underline{\underline{4=A}}$$

$$20. 1.25 \times [(0.2)^{15} - 1] / (0.2 - 1) = \underline{\underline{1.5625=B}}$$

$$21. U_2 = 8; U_5 = 27 = U_2 \times q^3$$

$$27 = 8 \times q^3 \rightarrow q^3 = 27/8$$

$$q = \sqrt[3]{27/8} = \underline{\underline{3/2=C}}$$

$$22. 500000 \frac{(1.06)^4 - 1}{0.06} (1.06)^6 + 750000 \frac{(1.06)^6 - 1}{0.06} = \underline{\underline{8334227.106=A}}$$

23. Let's be A, B, C the allowance received by each worker

$$A + B + C = S$$

$$C = 60000$$

$$\frac{A}{1/3} = \frac{B}{1/2} = \frac{C}{1/4}$$

$$\frac{A+B+C}{0.333+0.5+0.25} = \frac{S}{1.08333}$$

$$\frac{60000}{1/4} = \frac{S}{1.08333} \rightarrow 60000 \times 1.08333 = 0.25S \rightarrow S = \frac{60000 \times 1.08333}{0.25} =$$

$$\underline{\underline{260000=C}}$$

$$24. \frac{n}{\frac{1}{x_1} + \frac{1}{x_2} + \dots + \frac{1}{x_n}} \rightarrow \frac{7}{\frac{1}{2} + \frac{1}{3} + \frac{1}{4} + \frac{1}{4} + \frac{1}{5} + \frac{1}{x+7}} = 3.836 \rightarrow \underline{\underline{x=6.728=?}}$$

$$25. \text{The cash price} = (1 - 1 \times 20\%) - (1 - 1 \times 20\%) \times 5\% = 0.76$$

$$\text{The ratio of cash price to list price: } 0.76/1 = \underline{\underline{19:25=C}}$$