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QUESTION 1

1.1 15 kg pure coffee at R35 per kg : $R15 \times 35$
 = R525 ✓
 25 kg chicory at R6,20 per kg : $R6,20 \times 25$
 = R155 ✓
 40 kg of mixture cost : $R525 + 155$
 = R680 ✓
 Ave price of mixture per kg : $R \frac{680}{40}$ ✓
 = R17,00 ✓
 Ave price of mixture per 250g : $R17 \div 4$
 = R4,25 ✓ (6)

1.2 $\frac{5}{6} \div \left(\frac{2}{27} + \left(\frac{2}{3} \right)^3 \right)$
 $\frac{5}{6} \div \left(\frac{2}{27} + \frac{8}{27} \right)$
 $\frac{5}{6} \div \frac{10}{27}$ ✓
 $2 \frac{7}{6} \times \frac{27}{10}$ ✓
 $\frac{9}{4}$ ✓
 $2 \frac{1}{4}$ ✓ (6)

1.3 $\frac{1}{2} : \frac{1}{4} : \frac{1}{5}$
 $\frac{10}{20} : \frac{5}{20} : \frac{4}{20}$ ✓
 Total $10 + 5 + 4 = 19$ ✓
 A's share : $\frac{10}{19} \times \frac{9500}{1}$ ✓ = 5000 ✓
 B's share : $\frac{5}{19} \times \frac{9500}{1}$ = 2500 ✓
 C's share : $\frac{4}{19} \times \frac{9500}{1}$ = 2000 ✓

1.4 7,5% of sheep lost - drought
 Remainder : $100 - 7,5\%$
 = 92,5% ✓
 22% of remainder lost - disease
 i.e. 22% of 92,5% ✓
 $= \frac{22}{100} \times 92,5\%$
 $= 20,35\%$ ✓
 Total lost : $7,5 + 20,35\%$ ✓
 = 27,85% ✓
 % of original stock survived:
 $100 - 27,85\%$
 = 72,15% ✓ (6)

1.5 $SI = \frac{P \times R \times T}{100}$
 $= \frac{250 \times 0,18 \times 0,5}{100}$
 $= 33,75$ ✓
 Amt owing : $R250 + 33,75$
 $= R283,75$ ✓

1.6 Payment of goods
 in British pounds:
 $\frac{8193,78}{13,6563}$ ✓
 $= £600$ ✓ (6)

1.7 Profit on article sold:

$$96 \times \frac{25}{75} \left[\begin{array}{l} \text{sp} \\ 100 \end{array} \right] \left[\begin{array}{l} \text{cp} \\ 75 \end{array} \right] \left[\begin{array}{l} \text{Prof} \\ 25 \\ \times \end{array} \right]$$

$$= R32 \quad (6)$$

1.9 Book value at the end of the second year:

$$80000 \times 0.9 \times 0.85$$

$$= 61200 \quad (6)$$

1.8 Creditor's claim:

$$R \frac{1245}{100}$$

$$= R1245 \quad (6)$$

$$= R3735$$

1.10 Surface area of sph

$$4\pi r^2$$

$$88 = \frac{4}{7} \times \frac{22}{7} \times r \times r$$

$$616 = 196 r^2 \quad (6)$$

$$\frac{616}{196} = r^2 \quad [60]$$

QUESTION 2

2.1 Total amount realised:

Cash	3233 ✓
Debtors (160000 × 45)	72000 ✓
Moveable property	22000 ✓
Fixed property	80000 ✓
	<u>R177233</u> ✓

(7)

Payments:

Liquidation expenses	4900 ✓
Bond	110000 ✓
Other preferent claims (172000 - 110000)	62000 ✓
	<u>176900</u> ✓

Amount available to concurrent

Creditors: Amount Realised - Payments

$$177233 - 176900$$

$$= R333 \quad (7)$$

Total of unsecured claim

Total liabilities - Payments

$$= R250900 - 176900$$

$$= R74000 \quad (3)$$

Dividend payable:

$$\frac{333}{74000} \times \frac{100}{100}$$

$$= 45 \text{ cents in the Rand} \quad (5)$$

2.2 Amount credited with a claim of R10000

$$R10000 \times \frac{45}{100}$$

$$= R4500 \quad (3)$$

[25]

QUESTION 3.

3.1 Ratio of capitals:

$$\begin{array}{l} A : B \\ (60\,000 \times 3) + (80\,000 \times 9) : 37\,500 \times 12 \\ 180\,000 + 720\,000 : 450\,000 \\ 900\,000 \checkmark : 450\,000 \checkmark \end{array}$$

$$2 : 1 \checkmark \quad (4)$$

3.2 Interest on capitals:

$$A : \frac{60\,000}{1} \times \frac{3}{12} \times \frac{9}{100} \checkmark = 1350$$

$$\frac{80\,000}{1} \times \frac{9}{12} \times \frac{9}{100} \checkmark = 5400$$

$$\text{Total} : 6750$$

$$B : \frac{37\,500}{1} \times \frac{9}{100} \checkmark = 3375$$

$$\text{Total (A+B)} \quad R10125$$

3.3. Remaining profit: $R48\,000 - 10125$
 $= R37\,875 \checkmark$

Reserve fund amt: $\frac{20}{100} \times \frac{37\,875}{1} \checkmark$
 $= R7575 \checkmark$

$$R7575 \quad (5)$$

3.4. Remaining net profit: $R37\,875 - 7575 \checkmark$

B's share of the remaining net profit: $R \frac{1}{3} \times \frac{30\,300}{30\,300} \checkmark$

$$= R10100 \checkmark$$

$$= R10100 \quad (4)$$

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QUESTION 4

4.1 Cost price is $R35\,39,70$

Marked price at 20% profit:

$$\frac{35\,39,70 \checkmark}{1} \times \frac{120 \checkmark}{100 \checkmark}$$

$$= R42\,47,64 \checkmark$$

Marked price before discounts:

$$\frac{42\,47,64 \checkmark}{1} \times \frac{100 \checkmark}{90 \checkmark} \times \frac{100 \checkmark}{95 \checkmark}$$

$$= R4968 \checkmark \quad (10)$$

4.2.1. Selling price of article:

$$R640 \times \frac{87,5 \checkmark}{100 \checkmark}$$

$$= R560 \checkmark$$

CP of article: $R560 \times \frac{75 \checkmark}{100 \checkmark}$

$$= R420 \checkmark$$

4.2.2. New marked price:

$$\frac{640}{1} \times \frac{85 \checkmark}{100 \checkmark} = R544 \checkmark$$

CP of article: $R544 \times \frac{75 \checkmark}{100 \checkmark}$

$$= R408 \checkmark$$

Profit: $R544 - 408$

$$= R136 \checkmark$$

Profit %: $\frac{136 \checkmark}{408} \times \frac{100 \checkmark}{1} \%$

$$= 33\frac{1}{3} \% \checkmark \quad (15)$$

[25]

QUESTION 5.

5.1.1. Total monetary value of shares held
 $= R6000 \times 3,25$
 $= R19500$ ✓ (3)

5.1.2 Annual Income: $7,5\% \times 19500$
 $= R1462,50$ ✓ (3)

5.2.1 Proceeds from sale of ABC stock
 $= R3600 \times \frac{80}{100}$
 $= R2880$ ✓ (3)

5.2.2 Nominal value of XYZ stock
 $= R2880 \times \frac{100}{125}$
 $= R2304$ ✓ (3)

5.2.3 Income from ABC stock
 $R3600 \times \frac{9}{100} = R324$

Income from XYZ stock:
 $R2304 \times \frac{15}{100} = R345,60$

Change in income:
 $R345,60 - R324 = R21,60$ ✓ (3)
 (increase)

5.3.1 % income: $\frac{7\% \text{ of } 5000}{150} \times \frac{100}{1}$
 $= \frac{35}{150} \times \frac{100}{1}$
 $= 23\frac{1}{3}\%$ ✓ (4)

5.3.2 % income: $\frac{4}{12} \times \frac{100}{1}$
 $= 33\frac{1}{3}\%$ ✓ (3)

5.3.2 is most profitable
 [25]

Question 6

6.1.1 $l : b = 2 : 1$ i.e. $l = 2b$
 $2b \cdot b = 800$ ✓ (2) ($l \times b = \text{area}$)
 $2b^2 = 800$ $b = 20$ ✓

Length of lawn = $2 \times 20 = 40\text{m}$
 Breadth of lawn = 20m ✓

(4)

6.1.2 Area of lawn + path = $(40+3) \times 20$
 $= 43 \times 20$

$= 860$
 $= 989\text{m}^2$

Area of lawn: $40 \times 20 = 800\text{m}^2$ ✓

Area of path: $989 - 800 = 189\text{m}^2$

6.1.3. No of bricks: $\frac{100}{(1 \times 0,05)}$
 $= \frac{100}{0,005}$
 $= 20000$ bricks ✓

6.2.1 Total surface area: $(30 \times 30) \times 6\text{cm}$
 $= 5400\text{cm}^2$ ✓

6.2.2 Vol of ball: $\frac{4}{3} \pi r^3$
 $= \frac{4}{3} \times \frac{22}{7} \times \frac{15^3}{1}$
 $= 99000\text{cm}^3$ ✓

6.3.1. Vol of tank: $\pi r^2 h$
 $= \frac{22}{7} \times (3,5)^2 \times \frac{4}{1}$
 $= 154\text{m}^3$ ✓

Vol of tank in litres: 154×1000
 $= 154000\text{lit}$

6.3.2. Circumference: $2\pi r$
 $= \frac{2}{1} \times \frac{22}{7} \times \frac{3,5}{1}$
 $= 22\text{m}$ ✓

Surface area of tank: $4 \times 22\text{m}^2$
 $= 88\text{m}^2$ ✓

Cost of painting: $R88 \times 3,50$
 $= R308,00$ ✓ (12)

(6) [35]

QUESTION 7

7.1 Proposal A: $A = P(1 + \frac{r}{100})^{2n}$
 $= 20000(1 + \frac{6}{100})^6$
 $= 20000(1,03)^6$
 $= R23881,05$

Proposal B: $A = P(1 + \frac{r}{100})^n$
 $= 20000(1 + \frac{8}{100})^3$
 $= 20000(1,08)^3$
 $= R25194,24(14)$

Proposal B is the better investment.

7.2 $R.V = CP(1 - \frac{r}{100})^n$
 $= 80000(1 - \frac{15}{100})^5$
 $= 80000(0,85)^5$
 $= R35496,43(16)$
 [20]

QUESTION 8

8.1 Annual instalment: $\frac{\text{Amt to be redeemed}}{a_{18} \text{ at } 6\%}$
 $= \frac{300000}{10,8276}$
 $= R27706,97(4)$

8.2 Principal = $\frac{A}{s_{15} \text{ at } 8\%}$
 $= \frac{50000}{27,1521}$
 $= R1841,48(4)$

8.3 Amt due at the end of 10 yrs
 $= P(S_{11} - 1) \text{ at } 7\%$
 $= 20000(15,7836 - 1)$
 $= 20000(14,7836)$
 $= R295672(6)$

8.4 Present value of annuity due of 300 for 10 yrs = $300(a_{10} + 1) \text{ at } 5\%$
 $= 300(7,1078 + 1)$
 $= 300(8,1078)$
 $= R2432,34(6)$
 [20]

QUESTION 9

9.1 Cost of USA computer: $R250 \times 9 = R2318,2$

Cost of GB computer: $\frac{R1800 \times 9}{0,679} = R2458,23$

∴ Import computers from USA.

9.2 Cost of electricity: $R878 \times \frac{23}{100} = R207,82$

Cost of water (25 kl = 6 + 4 + 10 + 6 kl free)

4 x 2,15 per kl	R 8,60
10 x 3,25 per kl	32,50
5 x 4,48 per kl	22,40
	<u>R63,50</u>

Total cost to consumer: $R207,82 + R63,50 = R271,32$

9.3 9.3.1 (25-29) years ✓

9.3.2 (40-44) years ✓

9.3.3 Mean: $\frac{16+30+31+23+16}{7} = 19,86(2)$ ✓

Mode: 16% ✓

10; 13; 16; 16; 23; 30; 3

∴ Median 16% ✓ (5)

9.3.4 New Median: $\frac{16+23}{2} = 19,5$

New mean: $144 \div 8 = 18$

New Mean = $\frac{144}{8} = 18\%$ ✓ (4) [

QUESTION 10

See graph sheet. [3

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FINAL AMOUNTS FOR ₹1000 AT $3\frac{1}{2}\%$ CI
 AND FOR ₹1000 AT 6% SIMPLE INTEREST

SCALE: LONG AXIS 2cm = ₹200
 SHORT AXIS 2cm = 5 YEARS

