S6 Home Economics Practice Paper

S6 | Home Economics | Time: 75 minutes | Total: 100 marks | 24 questions

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Part 1 Rent and Housing Costs (17 marks)

Read each case and show your working.

1. A flat costs $12,000 per month. Find the yearly rent, and the monthly household income if rent is 30% of income.

Answer: Yearly rent = 12,000 x 12 = $144,000. Monthly income = 12,000 / 0.30 = $40,000.

2. The same flat is let on a two-year lease with a 5% rise in year two. Find the year-two monthly rent and the total rent over two years.

Answer: Year-two rent = 12,000 x 1.05 = $12,600; two-year total = 144,000 + 12,600 x 12 = $295,200.

3. Management fee is $1,800 a month and rates are $1,500 a quarter. Find the average monthly rates and the total monthly housing cost with rent of $12,000.

Answer: Monthly rates = 1,500 / 3 = $500. Total housing cost = 12,000 + 1,800 + 500 = $14,300.

4. The affordability cap is 30% of income. With income of $40,000, find the cap, the amount by which the actual cost exceeds it, and the cost as a percentage of income (2 decimal places).

Answer: Cap = 40,000 x 0.30 = $12,000; excess = 14,300 - 12,000 = $2,300; share of income = 14,300 / 40,000 x 100% = 35.75%, above the affordable level.

Part 2 Utilities and Appliance Energy (17 marks)

Electricity is charged at $1.2 per kWh.

5. An air conditioner draws 1.5 kW and runs 8 hours a day for 30 days a month. Find the monthly energy use (kWh) and the bill.

Answer: Energy = 1.5 x 8 x 30 = 360 kWh; bill = 360 x 1.2 = $432.

6. Switching to a Grade 1 model cuts energy use by 25%. Find the new consumption, the monthly kWh and money saved, and the annual saving.

Answer: New use = 360 x 0.75 = 270 kWh; saves 90 kWh a month, i.e. 90 x 1.2 = $108; $1,296 a year.

7. A 3.0 kW water heater runs 40 minutes a day. Find the daily and monthly (30 days) energy use and the monthly bill.

Answer: Daily = 3.0 x 40 / 60 = 2 kWh; monthly = 2 x 30 = 60 kWh, bill $72.

8. The flat uses 520 kWh a month, of which air conditioning takes 360 kWh. Find the share (1 decimal place) and the remaining use, and suggest two ways to save energy.

Answer: Share = 360 / 520 x 100% = 69.2%; remaining = 520 - 360 = 160 kWh. Set the air conditioner at 25.5 C, clean the filter regularly and switch off unused lights and appliances.

Part 3 Food Budget and Nutrient Needs (17 marks)

Take a month as 30 days.

9. A family of four has a monthly food budget of $6,000. Find the food cost per person per day.

Answer: Per person per day = 6,000 / (4 x 30) = $50.

10. The daily protein requirement is 0.8 g per kg of body weight. How much protein does a 60 kg adult need, and how many eggs (6.3 g protein each) would supply it (give a whole number and explain)?

Answer: Need = 0.8 x 60 = 48 g; eggs = 48 / 6.3 = 7.6, so 8 eggs are needed; in practice protein should come from a mix of meat, fish and pulses rather than eggs alone.

11. Daily energy need is 2,000 kcal, split 30% breakfast, 40% lunch and 30% dinner. Find the energy of each meal.

Answer: Breakfast = 2,000 x 0.30 = 600 kcal; lunch = 2,000 x 0.40 = 800 kcal; dinner = 2,000 x 0.30 = 600 kcal, totalling 2,000 kcal.

12. The same ingredient costs $38 for 500 g at a supermarket and $36 for 600 g at a wet market. Find the price per 100 g for each and the difference when buying 2 kg.

Answer: Supermarket = 38 / 5 = $7.6 per 100 g; wet market = 36 / 6 = $6.0 per 100 g. The gap is $1.6 per 100 g, so 2 kg (20 units) differs by $32; the wet market is cheaper.

Part 4 Textiles and Garment Care (17 marks)

The questions concern garment making, washing and fibre content.

13. A garment uses 1.8 m of fabric at $45 per metre, plus $12 of trims and $60 of labour. Find the cost and the selling price at a 30% markup.

Answer: Fabric = 1.8 x 45 = $81; cost = 81 + 12 + 60 = $153; price = 153 x 1.30 = $198.90.

14. A cotton garment shrinks 3% when washed at 40 C. Its length was 70 cm; find the new length and explain why the care label asks for a low temperature.

Answer: New length = 70 x (1 - 0.03) = 67.9 cm. Cotton fibres swell in hot water and contract on drying, so repeated hot washes cause further shrinkage and loss of shape; hence the label asks for a low temperature and no tumble drying.

15. A washing machine uses 0.9 kWh per load and runs 5 times a week. Find the energy use over four weeks and the cost at $1.2 per kWh.

Answer: Energy over four weeks = 0.9 x 5 x 4 = 18 kWh; cost = 18 x 1.2 = $21.6.

16. A 300 g garment is 65% polyester and the rest cotton. Find the mass of each fibre.

Answer: Polyester = 300 x 0.65 = 195 g; cotton = 300 - 195 = 105 g. Polyester dries fast and wears well but breathes poorly; cotton absorbs sweat and breathes well but creases, so blends balance the two.

Part 5 Consumer Credit and Savings (16 marks)

The questions concern credit cards, instalments and savings plans.

17. A credit card balance is $8,000 at 30% a year. Find the monthly interest and explain the effect of paying only the minimum.

Answer: Monthly interest = 8,000 x 0.30 / 12 = $200. Paying only the minimum means most of each payment covers interest, the principal falls very slowly and total repayments greatly exceed the original price.

18. The savings goal is $30,000 at $2,500 a month, ignoring interest. How many months are needed, and with 2% a year compounded monthly would it take longer or shorter?

Answer: Months = 30,000 / 2,500 = 12. With compounding the balance grows faster, so it takes slightly less time, though at 2% a year the gain is small.

19. An appliance costs $6,000 or 12 instalments of $540. Find the total paid, the total interest and the interest as a percentage of the price (1 decimal place).

Answer: Total paid = 540 x 12 = $6,480; interest = 6,480 - 6,000 = $480; 8.0% of the price.

20. Monthly income is $40,000 and the savings target is 20% of income. Find the target amount; if only $6,000 is actually saved, find the actual rate and the shortfall in percentage points.

Answer: Target = 40,000 x 0.20 = $8,000; actual rate = 6,000 / 40,000 x 100% = 15%; shortfall = 20% - 15% = 5 percentage points.

Part 6 Consumer Rights and Sustainable Living (16 marks)

The questions concern refunds, carbon footprint, food waste and second-hand clothing.

21. An online purchase costs $480 and returns carry a 5% handling fee. Find the fee and the refund, and explain the purpose of a cooling-off period.

Answer: Fee = 480 x 0.05 = $24; refund = 480 - 24 = $456. A cooling-off period lets shoppers cancel within a set time when they could not inspect the goods, reducing impulse buying and the risk of goods not matching the description.

22. Each wash uses 0.9 kWh and every kWh emits 0.7 kg of carbon dioxide. Find the emissions per wash and per week (5 washes).

Answer: Per wash = 0.9 x 0.7 = 0.63 kg; per week = 0.63 x 5 = 3.15 kg.

23. A household throws away 6 kg of food waste a month. Find the yearly total, and the amount left after a 40% reduction.

Answer: Yearly = 6 x 12 = 72 kg; a 40% cut saves 28.8 kg, leaving 43.2 kg. Buy to plan, use leftovers and store food properly.

24. A new garment costs $300 and the same item second-hand costs $90. Find the percentage saved and the yearly saving on eight items.

Answer: Saving = (300 - 90) / 300 x 100% = 70%; eight items save 8 x (300 - 90) = $1,680, while extending garment life and cutting textile waste.