GCSE Higher — Functional Maths Practice Paper

(Calculator allowed — Paper 3 style)

Section A — Short Functional Questions *(10 questions)*

1.
Amir earns £39,200 a year.
Income Tax: 0% on the first £12,570, 20% on the rest.
Work out his Income Tax.

2.
Nadia invests £2,800 at 4% simple interest for 3 years.
Work out the total interest earned.

3.
A fridge costs £620.

- Shop A: 10% discount.
- Shop B: £50 discount.
  Which shop is cheaper and by how much?

4.
A phone contract is £25/month for 24 months.
Work out the total cost.

5.
Rashid buys a car for £18,000. It depreciates by 12% in the first year.
Work out its value after 1 year.

6.
Saira is charged 0% National Insurance on the first £9,880 of her salary, then 13.25% on the rest.
Her salary is £30,400.
Work out her National Insurance.

7.
Ali invests £6,500 at 3% compound interest for 2 years.
Work out the total value after 2 years.

8.
Hassan's salary rises from £28,400 to £30,200.
Find the percentage increase.

9.

Two energy suppliers offer:

- Supplier A: £100/year standing charge + £0.20/unit.

- Supplier B: £180/year standing charge + £0.15/unit.
  If 10,000 units are used, which is cheaper?

10.

A shop sells a washing machine for £450 cash or £50 deposit + 12 monthly payments of £35.
Which is cheaper and by how much?

Section B — Multi-Step Problems *(12 questions)*

11.

Kiran paid £5,186 Income Tax.
Tax: 0% on first £12,570, 20% on the rest.
NI: 0% on first £9,880, 13.25% on the rest.
Work out her National Insurance.

12.

Sara is offered two jobs:

- Job A: £29,000 salary + £1,500 bonus.

- Job B: £30,200 salary, no bonus.
  Tax: 0% on first £12,570, 20% on the rest.
  Which job gives more after-tax pay?

13.

A £5,000 loan is taken at 6% simple interest for 4 years.
Work out the total amount to be repaid.

14.

David invests £12,000.

- Bank A: 2.2% simple interest for 5 years.

- Bank B: 1.9% compound interest for 5 years.
  Which bank pays more interest?

15.

Maria's salary is £44,500. She is offered a £2,500 pay rise.
Tax: 0% on first £12,570, 20% on rest.
NI: 0% on first £9,880, 13.25% on rest.
How much of the pay rise does she keep after tax and NI?

16.

A van costs £21,000. It depreciates by 15% each year.
Work out its value after 3 years.

17.

A population is 36,000 now and grows by 2.8% each year.
Work out the population after 7 years.

18.

A pension scheme takes 5% of a £38,400 salary and the employer matches the payment.
Work out the total annual pension contribution.

19.

A house bought for £180,000 increases in value by 6% in the first year and 4% in the second year.
Work out its value after 2 years.

20.

Two gyms offer:

- Gym A: £450/year.
- Gym B: £45/month.
  Which is cheaper for 3 years?

21.

A company charges £120 call-out fee + £40/hour.
Another charges £60 call-out fee + £55/hour.
If a job takes 6 hours, which company is cheaper?

22.

A taxi company charges £3.50 start fee + £1.20/km. Another charges £5 start fee + £1/km.
Which is cheaper for a 20 km journey?

Section C — Extended Problems *(8 questions)*

23.

Omar earns £48,000/year.
Tax: 0% on first £12,570, 20% on rest.
NI: 0% on first £9,880, 13.25% on rest.
Work out total deductions and net pay.

24.

Two shops sell a TV:

- Shop A: £800 with 15% discount.

- Shop B: £780 with 10% discount + free soundbar worth £70.
  Which offer is better value?

25.

A business invests £25,000 in new equipment.

- Bank Loan: 4% compound interest yearly for 5 years.

- Finance Plan: £2,000 deposit + £500/month for 5 years.
  Which costs less overall?

26.

Zara's salary is £41,000.
Tax: 0% on first £12,570, 20% on rest.
NI: 0% on first £9,880, 13.25% on rest.
She contributes 6% of her salary to a pension.
Work out her take-home pay after tax, NI, and pension.

27.

Two savings accounts:

- Account A: 2.5% compound interest yearly for 4 years.

- Account B: 3% simple interest yearly for 4 years.
  Which pays more on £14,500?

28.

A £22,000 car depreciates by 10% per year for 4 years.
Another £22,000 car depreciates by 8% per year for 4 years but needs a £1,200 repair in year 3.
Which costs less over 4 years?

29.

Ali has £15,000 to invest. He can choose:

- Investment A: 4% compound interest yearly for 3 years.

- Investment B: 5% simple interest yearly for 3 years but with a £200 annual management fee.
  Which gives more at the end?

30.

Sophie is offered two sales jobs:

- Job 1: £25,000 salary + 3% commission on £60,000 sales.

- Job 2: £28,000 salary + 1% commission on £90,000 sales.
  Tax: 0% on first £12,570, 20% on rest.
  Which job pays more after tax?