



A-level

COMPUTER SCIENCE

Paper 2

7517/2

Insert

FIGURE 5 for use in answering Question 3.

FIGURE 6 for use in answering Question 5.

FIGURE 7 for use in answering Question 7.

FIGURE 11 for use in answering Question 11.

FIGURE 12 for use in answering Question 12.

TABLE 3 for use in answering Question 12.

TABLE 4 for use in answering Question 12.

[Turn over]

FIGURE 5

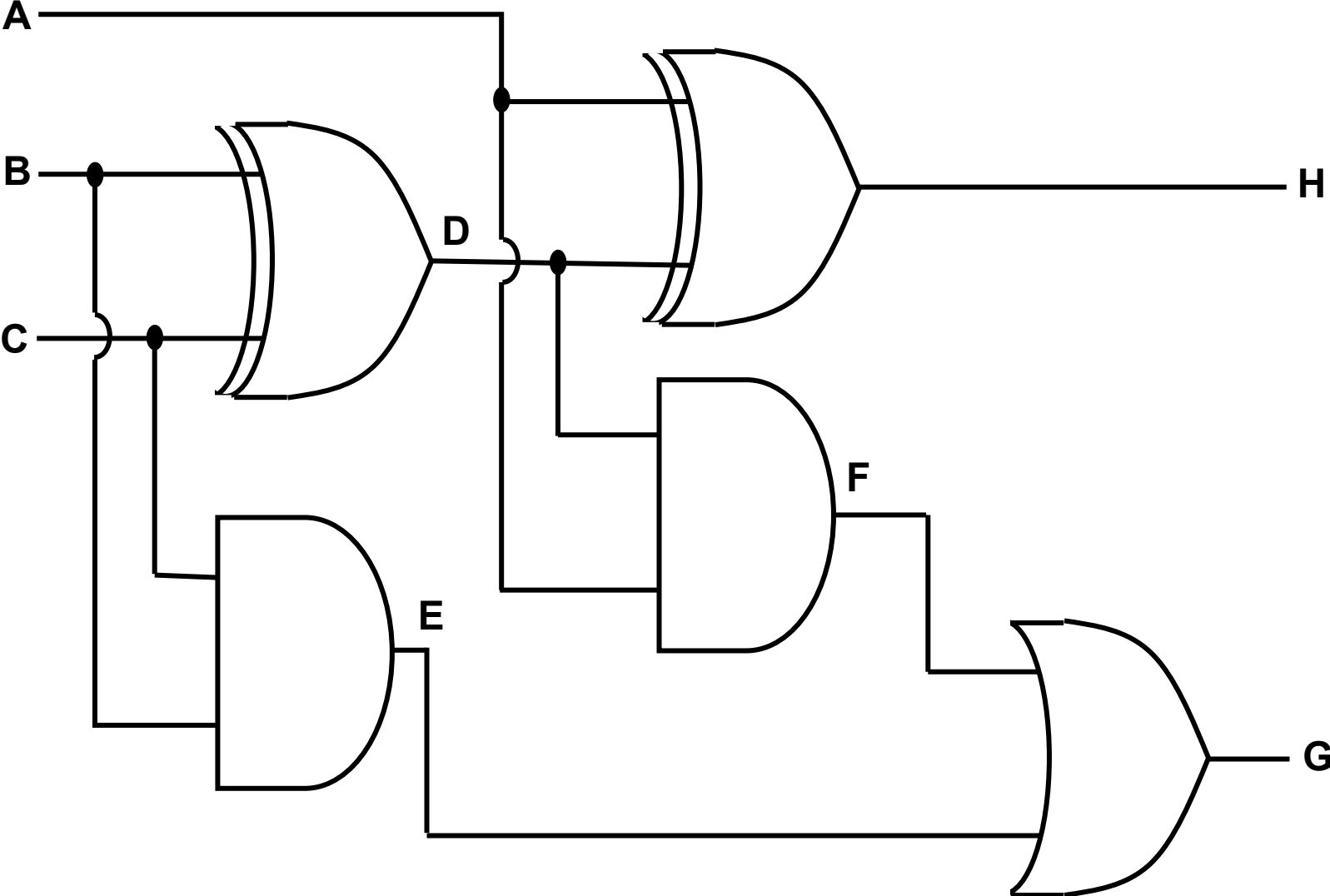
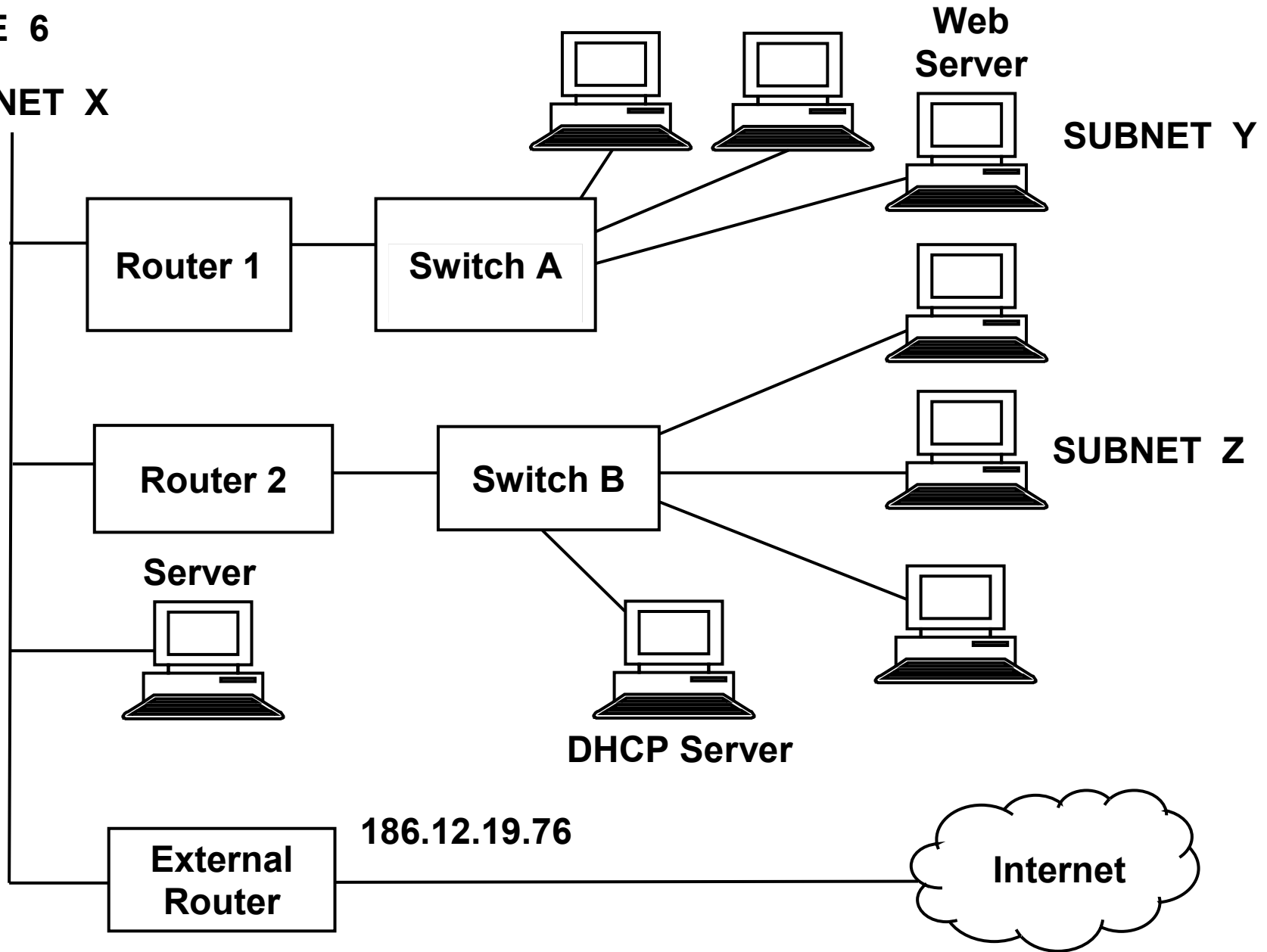


FIGURE 6

SUBNET X



3

[Turn over]

FIGURE 7

Athlete(AthleteID, Surname, Forename, DateOfBirth, Gender, TeamName)

EventType(EventTypeID, Gender, Distance, AgeGroup)

Fixture(FixtureID, FixtureDate, LocationName)

EventAtFixture(FixtureID, EventTypeID)

EventEntry(FixtureID, EventTypeID, AthleteID)

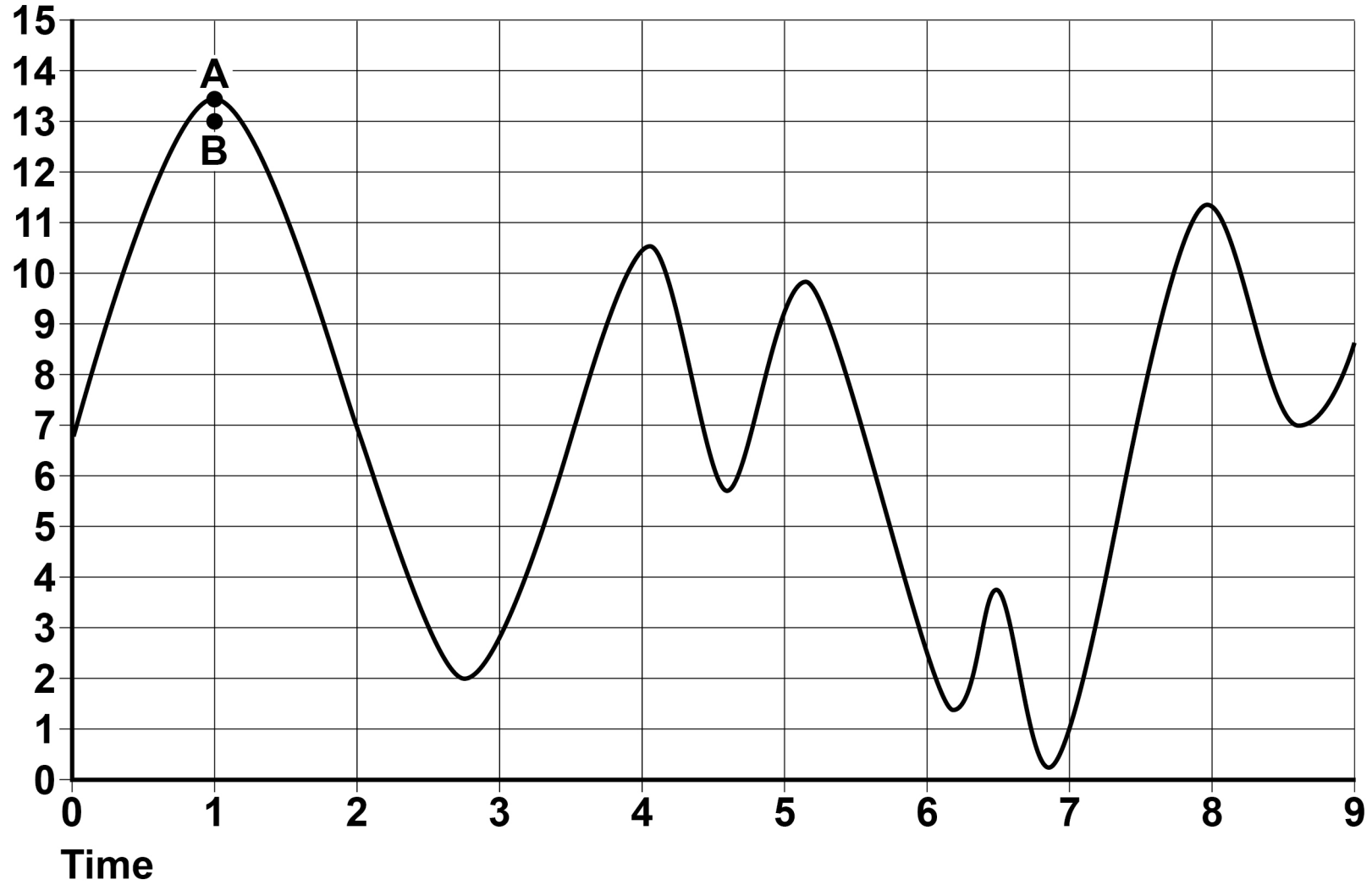
➔

- Each Athlete, EventType and Fixture is identified by a unique identity number, for example AthleteID for athletes.
- An EventType is a type of event, such as Boys' 100m Under 15 race.
- If an athlete wants to take part in an event at a particular fixture, then an entry is created in the EventEntry relation to represent this.

FIGURE 11

Amplitude

Analogue signal



[Turn over]

FIGURE 12

```
IF characterCode >= 65 AND characterCode
<= 90 THEN
    encryptedCode ← characterCode +
keyValue
    IF encryptedCode > 90 THEN
        encryptedCode ← encryptedCode - 26
    ENDIF
ELSE
    encryptedCode ← characterCode
ENDIF
```

TABLE 3

A	65
B	66
C	67
D	68
E	69
F	70
G	71
H	72
I	73
J	74
K	75
L	76
M	77

N	78
O	79
P	80
Q	81
R	82
S	83
T	84
U	85
V	86
W	87
X	88
Y	89
Z	90

[Turn over]

TABLE 4 Standard AQA assembly language instruction set

LDR Rd, <memory ref>	Load the value stored in the memory location specified by <memory ref> into register d.
STR Rd, <memory ref>	Store the value that is in register d into the memory location specified by <memory ref>.
ADD Rd, Rn, <operand2>	Add the value specified in <operand2> to the value in register n and store the result in register d.
SUB Rd, Rn, <operand2>	Subtract the value specified by <operand2> from the value in register n and store the result in register d.
MOV Rd, <operand2>	Copy the value specified by <operand2> into register d.
CMP Rn, <operand2>	Compare the value stored in register n with the value specified by <operand2>.
B <label>	Always branch to the instruction at position <label> in the program.

B<condition> <label>	<p>Branch to the instruction at position <label> if the last comparison met the criterion specified by <condition>. Possible values for <condition> and their meanings are:</p> <p>EQ: equal to NE: not equal to GT: greater than LT: less than</p>
AND Rd, Rn, <operand2>	Perform a bitwise logical AND operation between the value in register n and the value specified by <operand2> and store the result in register d.
ORR Rd, Rn, <operand2>	Perform a bitwise logical OR operation between the value in register n and the value specified by <operand2> and store the result in register d.
EOR Rd, Rn, <operand2>	Perform a bitwise logical XOR (exclusive or) operation between the value in register n and the value specified by <operand2> and store the result in register d.
MVN Rd, <operand2>	Perform a bitwise logical NOT operation on the value specified by <operand2> and store the result in register d.

[Turn over]

LSL Rd, Rn, <operand2>	Logically shift left the value stored in register n by the number of bits specified by <operand2> and store the result in register d.
LSR Rd, Rn, <operand2>	Logically shift right the value stored in register n by the number of bits specified by <operand2> and store the result in register d.
HALT	Stops the execution of the program.

Labels: A label is placed in the code by writing an identifier followed by a colon (:). To refer to a label, the identifier of the label is placed after the branch instruction.

Interpretation of <operand2>

<operand2> can be interpreted in two different ways, depending on whether the first character is a # or an R:

- # – use the decimal value specified after the #, eg #25 means use the decimal value 25.
- R_m – use the value stored in register _m, eg R₆ means use the value stored in register 6.

The available general purpose registers that the programmer can use are numbered 0 to 12.

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