GENERAL POST OFFICE,
RADIO AND ACCOMMODATION DEPARTMENT,
HEADQUARTERS BUILDING, ST. MARTIN'S-LE-GRAND,
LONDON, E.C. 1.

1952

RADIO AMATEURS' EXAMINATION

Saturday, 4th October, 1952 2.30 p.m. to 5.30 p.m.

Answer ALL questions.

1. A 36-volt battery of negligible internal resistance is used to heat the filaments of a receiver employing four valves in series rated at 6.25 volts each. What resistance should be included in the circuit to limit the current to 0.3A ?

(15 marks)

2. State the procedure which should be used by the operator of an amateur station when calling another station. What is the maximum continuous time which may be occupied in making a call ?

(10 marks)

3. Describe the construction of a pentode valve and state the function of each electrode. What do you understand by the amplification factor of a valve ?

(10 marks)

4. Describe with the aid of a diagram a transmitter employing a crystal oscillator, buffer stage and power amplifier. How can different frequencies be obtained using the same crystal ?

(15 marks)

[SEE OVER]

5. Moving-coil, moving-iron and hot-wire ammeters are available to you. Which would you use to measure aerial current ? Describe the construction and action of the meter selected and show how it is connected in the circuit.

(15 marks)

6. An aerial has an inductance of 62.5 microhenrys and a capacitance of 0.0001 microfarads. If this circuit is set oscillating what will be the frequency of the wave radiated ? (π^2 may be taken as 10)

(15 marks)

7. Draw a diagram of the second detector stage of a superheterodyne receiver and explain fully how the intermediate frequency is converted into an audible frequency. *(10 marks)*

8. Give a diagram of a circuit suitable for supplying smoothed h.t. from a.c. mains and describe its action.

(10 marks)