



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

1960

RADIO AMATEURS' EXAMINATION

Saturday, 1st October, 1960 2.30 p.m. to 5.30 p.m.

Part 1

Both questions in this part MUST be answered.

1. With reference to an amateur sending and receiving station, what is meant by :

(a) "the temporary alternative address or location" ?

(b) "the alternative address" ?

What are the conditions laid down as to the use of the station call-sign in the cases (a) and (b) above ?

In general, when must the call-sign of an amateur station be sent and, in the case of Morse transmissions, at what speed should it be sent ?

(15 marks)

2. Describe and explain a method of ensuring that the voltage of the h.t. supply to a transmitter remains stable within close limits. Describe and explain the undesirable effects that can arise when an unstabilized h.t. supply is used for a transmitter.

(15 marks)

Part 2

Answer SIX of the eight questions in this Part.

3. Describe the construction of an r.f. pentode valve and state the purpose of each electrode.

(10 marks)

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4. Why is neutralization necessary when a triode valve is used as an r.f. amplifier? Show by a diagram how it is applied and explain the action of the circuit.

(10 marks)

5. Describe, with the aid of diagrams, one method of demodulation suitable for use in a receiver for amplitude modulated waves.

(10 marks)

6. Explain what is meant by an "artificial aerial" and describe a type suitable for use with an amateur transmitter. Explain its use.

(10 marks)

7. Describe fully a three stage tuned radio frequency receiver for the reception of modulated and unmodulated high frequency waves in the range 2 Mc/s to 28 Mc/s.

(10 marks)

8. Describe the paths taken by electro-magnetic waves :

- (a) at 2 Mc/s over a distance of 150 miles,
- (b) at 14 Mc/s over a distance of 3,000 miles,
- (c) at 144 Mc/s over a distance of 30 miles.

(10 marks)

9. What is meant by :

- (a) mutual induction ?
- (b) self-induction ?

Define the unit of self-inductance.

(10 marks)

10. What is the total heater power dissipated in a receiver having four valves, all with their heaters joined in series. The ratings of the heaters are as follows: V1 = 12 volts 0.3 amp, V2 = 12 volts 0.3 amp, V3 = 15 volts 0.3 amp, V4 = 25 volts 0.3 amp.

(10 marks)