Practice Question Set For A-Level
Subject : Physics
Paper-3 Topic: Section B (Section 13_ Electronics)

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Name of the Student:_____
Max. Marks : 22 Marks **Time : 22 Minutes**

Mark Schemes

Q1.

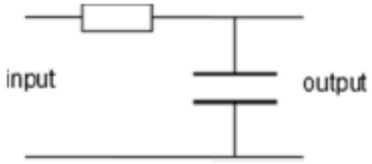
(a) range of frequencies in signal ✓
reference to frequency at which signal drops by
e.g. power 3dB (50%) / voltage 6dB (71%) ✓

2

(b) low pass / treble cut ✓

1

(c) (i) RC filter circuit, with input & output labelled ✓
correct R & C positions ✓



2

(ii) substitute values into f = 1 / 2πRC ✓

rearrange for C ✓

40 (39.7) nF ✓

3

(d) (i) gain > 1 ✓

1

(ii) 100Hz ✓

1

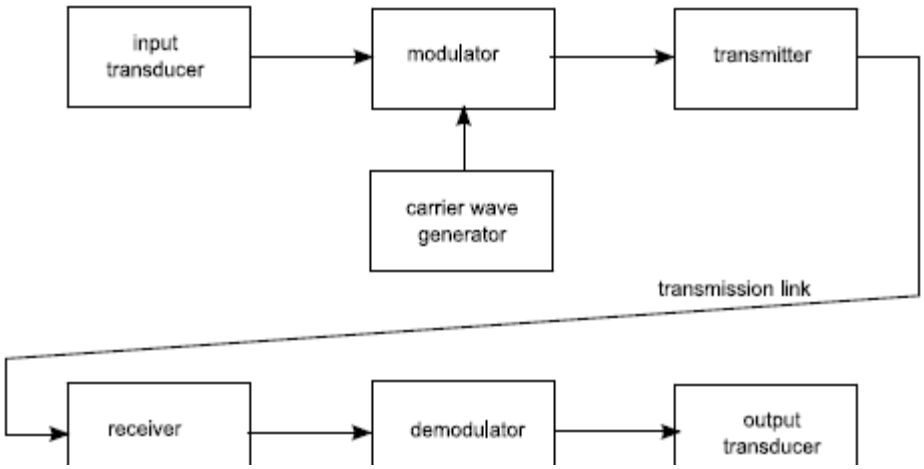
(iii) gain = 0.2 ✓ output = 0.4V ✓

2

[12]

Q2.

(a)



transmitter & receiver, carrier wave gen ✓
demodulator & modulator✓

2

(b) e.g. free space
optical fibre
twisted pair
coax cable (any 3 ✓✓✓)

3

(c) (i) superimpose the information signal onto the carrier wave ✓

1

(ii) AM − constant frequency sinusoidal wave matching carrier wave ✓
amplitude varies in phase with information signal ✓
FM − constant amplitude sinusoidal wave ✓
frequency varies in phase with information signal ✓

4

[10]