# Intermediate Mock Exam Answers

1 – B – tuned circuit frontend

2 – B – IF strip

3 – C Operating in Scotland requires an ‘M’ regional identifier. *So it can only be callsigns 2M0ABC, or MM0XYZ (if supervised) and the MM0 option isn’t in the answers so it must be 2M0*

4 – A SSB reception requires a Carrier Insertion Oscillator (and some careful tuning)

5 – C 470k (2%) Take care - the text labels on the bands are right-left!

6 – A Switch will bypass the blocking diode and a 2v Battery into a 2V Bulb will light correctly

7 – C Transformers are AC, so to measure AC Volts on the output/secondary winding ….

8 – D Point Z has all the current flowing thru it

9 – B Power = V x I (12v x 2A) – you can ignore a few mA of bias current in the resistors

10 – B Need to ensure that it is zeroed to calibrate out lead resistance etc (as per old Avos)

11 – C Horizontal radials attached to Vertical antennas - which will thus be vertically polarised

12 – A 20km eg quite typical for a contact on a 70cm repeater

13 – A Polythene (or PTFE) are typical PVC (d) is fine for outer waterproofing but too lossy for RF

14 – C Antenna system = Antenna + feeder

15 – B 10GHz = 3x 108 / 10 x 109 or 300 / 10000 MHz = 0.03 metres = 3cm

16 – C /MM is Maritime Mobile – not permitted at Intermediate

17 – C 21.10 x 3 MHz = 73.3 MHz (not kHz or GHz!)

18 – B 3.62 x 2 = 7.24 MHz - not an amateur HF band in the UK - but is Short Wave Broadcasting

19 – C As it’s just a capacitor, Vrms/Irms = Xc its reactance - not the more generic Impedance

20 – D Listen on the harmonic freqs with a separate but nearby receiver

21 – D – The Wattmetter is in the output to the Dipole Antenna

22 – C Any modulation will create some form of sidebands

23 – C Balnced modulator/mixer suppress the carrier to leave just the two sidebands

24 – D eg Ferrite clamps/rings act as a DC low pass filter to suppress RF on the PSU leads

25 – D

26 – B Log is in UTC but its June (Summer time) so 10:15pm is 22:15pm BST = 21:15 UTC

27 – D Literally - the Frequency is Busy

28 – D Official Phonetics please!

29 – A assuming you are a member

30 – C - same as Foundation really

31 – B 10m opens up at Sunspot Max (sunspots don’t affect VHF/UHF bands)

32 – D SWR meter

33 – A Coax cable

34 – B Each set of three resistors in series is 11.1k (take care with units!).

* Two identical sets in parallel is half that, to give 5.55k or 5550 Ohms

35 – A EMC screening

36 – B 1:4 Offset:Height (not 4:1 - watch the order of the words in the Ladder question)

37 – B cut the power – with your Shack emergency on/off switch…

38 – C Mixer question. It has to be a valid sum or difference only the Sum is listed (not 5.63 diff)

39 – D Whatever ever the Ofcom Intermediate Licence schedule says!

40 – C Whatever Ofcom deem important

41 – D As frequenctly as practical to ensure you are identifiable at all times

42 – B Must be a W in the RSL for a Welsh campsite (/M or /P or /A are all possible!)

43 – C 5840 MHz see handout its Satellite-to-Earth only (downlinks) - so you Receive – not transmit

44 – C when visible by both stations (Store+fwd data systems are out of syllabus)

45 – D as per the Supervision guidance - under your callsign/conditions of course