

**NIGERIAN METEOROLOGICAL AGENCY  
REGIONAL TRAINING CENTER, OSHODI  
COURSE NO.17/0/IV/47  
SECOND SEMESTER EXAMINATION**

COURSE: 121: UPPER AIR OBSERVATIONS  
DATE: 9<sup>TH</sup> OF MAY, 2018  
TIME: 2HRS 30MINS  
INSTRUCTION: ANSWER ALL  
NB: EXAMINATION MALPRACTICE IS PROHIBITED

**QUESTION 1(5MKS)**

Given the: station height (62.5ft), calculate the following:

- (i) Time of Release; and
- (ii) height of balloon above the station.

**QUESTION 2(20MKS)**

Use the value of 'height of balloon above the station' from QUESTION 1 and compute the Pilot Balloon Ascent with the values of Azimuth and Elevation provided below:

t	A	E	t	A	E	t	A	E
1	132.4	52.8	8	0.5	59.5	15	255.6	32.1
2	93.4	44.8	9	330.5	59.4	16	255.7	30.4
3	80.7	40.6	10	303.4	55.9	17	256.0	28.9
4	71.2	41.9	11	284.3	51.2	18	255.8	27.6
5	58.5	44.6	12	269.7	25.8	19	256.8	27.3
6	45.5	48.6	13	261.9	40.0	20	257.5	26.9
7	25.8	54.0	14	257.8	35.2	21	258.4	26.5

**QUESTION 3(15MKS)**

Given the following: (i) time of ascent [0615Z]; (ii) station [Oshodi]; (iii) date of ascent [May 9, 2018]; (iv) surface wind [25010] and (v) station no [65202], code the Part A and Part B of Pilot Balloon messages.

**QUESTION 4(10MKS)**

Decode the Part A of the Radiosonde message given below:

TTAA 80121 65202

99015 32458 26005 00150 28650 22012 92839 23025 21504

85573 19436 16002 70227 11257 06514 50594 04965 10515

40766 16164 09016 30976 31159 09513 25103 40363 08504

20251 52550 01009 15431 68544 34508 10665 82924 06508

88999

77999

QUESTION 5(20MKS)

Decode the Part B of the Radiosonde message given below:

TTBB 80128 65202

00015 32458 11003 29856 22936 23624 33926 23025 44889

20216 55880 19618 66872 20228 77854 19434 88837 19847

99737 13858 11715 12239 22694 10857 33646 05431 44600

01648 55585 00132 66417 14169 77403 15962 88393 16773

99367 20359 11334 25384 22292 32756 33255 39164 44101

82524 55100 82924

21212 00015 26005 11996 22013 22983 22012 33951 20507

44933 22504 55919 21004 66800 07007 77771 09008 88674

06516 99622 08017 11600 08516 22498 10515 33430 08516

44277 11009 55252 08503 66228 01503 77217 35502 88204

36008 99200 01009 11191 36010 22164 35009 33161 34009

44122 36004 55112 03502 66109 09501 77100 06508

31313 41708 81130

41414 85538

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