Sheffield DClin Psy

Selection 2

Numeracy/Statistics Task

Please write your answer on the dotted line beneath each question. Answers must be written in pen. There is a sheet for rough working at the back of your answer booklet. This forms part of your answer booklet and should not be detached.

At the end of the test you should leave your answer booklet face down on the desk.

TEST A

1. Calculate: $20 + 3(7 - 4/2)$

……**35** (1)……

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2. Calculate $6^2 + \sqrt{16}$

……**40** (1)

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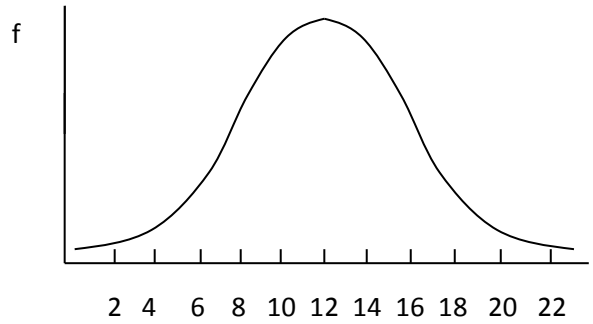
3. A scale measuring depression was given to a large number of people. A diagram of the distribution of their scores is shown below. Estimate the mean and standard deviation of the scores from the diagram, to the nearest multiple of 2.



Estimated mean ……**12** (1)……

Estimated standard deviation ……**4** (1)……...

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4. If $10 + 4x = -2$, what is x?

…… **-3** (1)……...

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5. Express 7/8 as a decimal (to 3 decimal places).

…… **0.875** (1)

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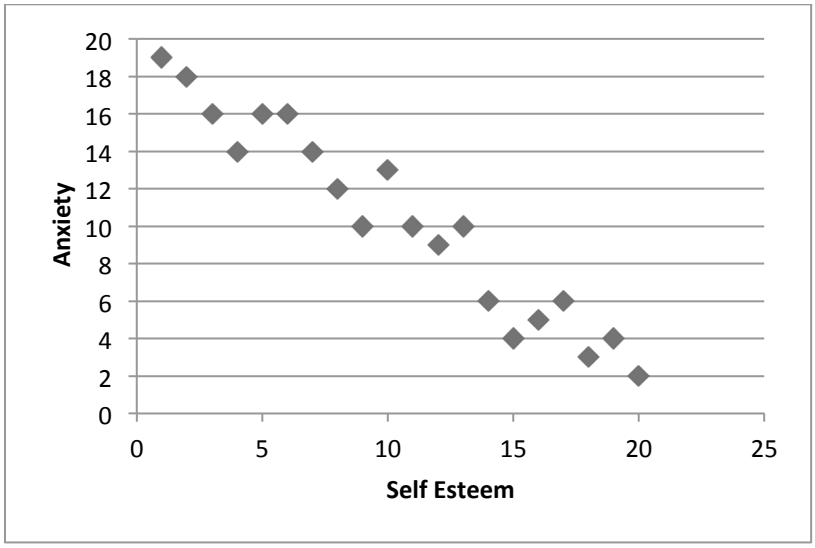
6. An investigator measured the self esteem and anxiety of 20 participants (using rating scales) and plotted the 20 obtained pairs of scores on a scatter plot (see below). If the Pearson correlation coefficient, r, were calculated from these data, which of the following values of r would best describe the scatter plot?

(circle your choice) +0.1 -0.1 +0.5 -0.5 +0.9 **-0.9** (1)



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7. Express 39/52 as a simpler fraction

……**3/4**…(1)……

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8. Write these three decimals in ascending order of magnitude: 0.03, 0.009, 0.1.

……**0.009, 0.03, 0.1**……(1)……...

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9. Two equivalent studies were carried out comparing the IQs of girls with blue and with brown eyes. The results of Student's t tests showed p = .139 in one case and p = .031 in the other. Which, if either, result is statistically significant at the 0.05 level?

…… **p = .031** (1)……...

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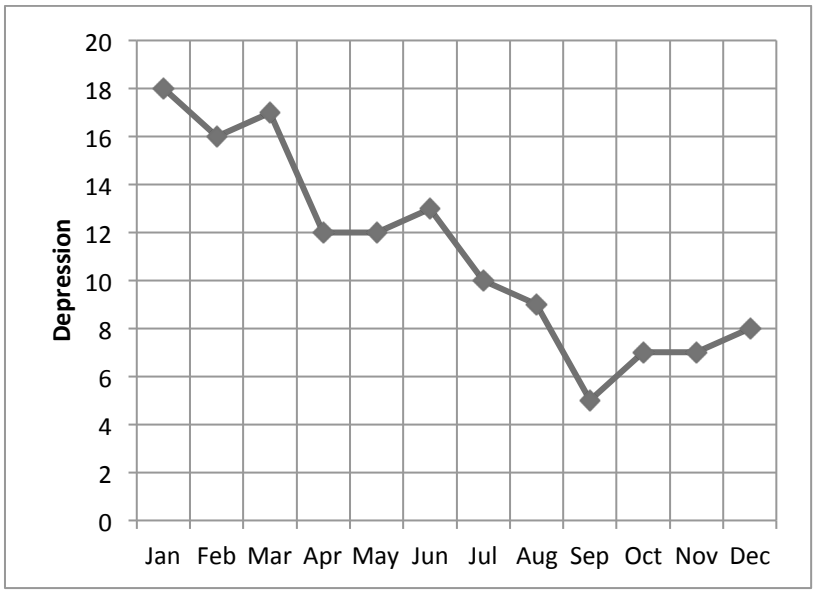
10. In a single-case study, a psychologist recorded a patient's depression score in the middle of each month for 12 months. These scores are shown in the graph below.

a) When was depression at a minimum?……**September** (1)……

b) What was its value then? ……**5** (1)……

c) When did it change most? ……**April (or Mar to Apr)** (1)……..

d) By how much? ……**5** (1)……



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11. If 60 is the maximum possible score on a test, what percentage of the maximum is a score of 45?

……**75%** (1)……..

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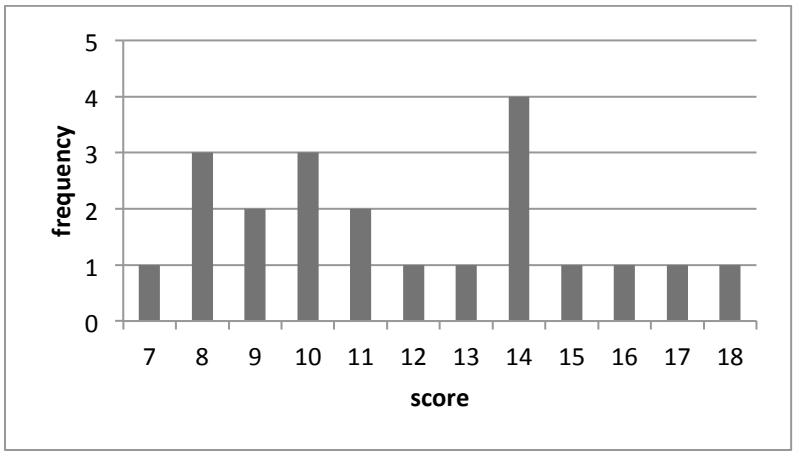
12. In a test of motor skill, 21 people achieved scores ranging from 7 to 18 as depicted in the histogram below. What are the values of

a) the mode? ……**14** (1)……

b) the median? ……**11** (1)……



13. An investigator has access to a large sample (2500) of participants and finds that 100 of them are strongly left-handed. If one participant is selected at random, what is the probability (between zero and 1) that he or she will be strongly left-handed

……**0.04**……(1)……..

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14. Roughly estimate the value of this quantity, 55.53/(9.82 – 4.84), to the nearest whole number. (Do not attempt to calculate it exactly.)

……**11**……(1)…….

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15. A study looked at differences between clients taking 4 different anti-depressant medications, and also differences between clients aged under 40 and over 40, in their severity of depression as measured by a standardised scale (CES-D). Name the independent and dependent variables in this study and indicate whether each variable is continuous or categorical.

a Independent……**ANTI-DEPRESSANT, CATEGORICAL; AGE GROUP, CATEGORICAL**....

b) Dependent ……**CES-D, CONTINUOUS**……..

MAX 3 MARKS (1/2 for each part)

End of test sheet