INFORMATION AND COMMUNICATION TECHNOLOGY   **0417/32**

Paper 3 Practical Test B   **May/June 2017**

MARK SCHEME

Maximum Mark: 80

Published

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

Cambridge will not enter into discussions about these mark schemes.

Cambridge is publishing the mark schemes for the May/June 2017 series for most Cambridge IGCSE®, Cambridge International A and AS Level and Cambridge Pre-U components, and some Cambridge O Level components.
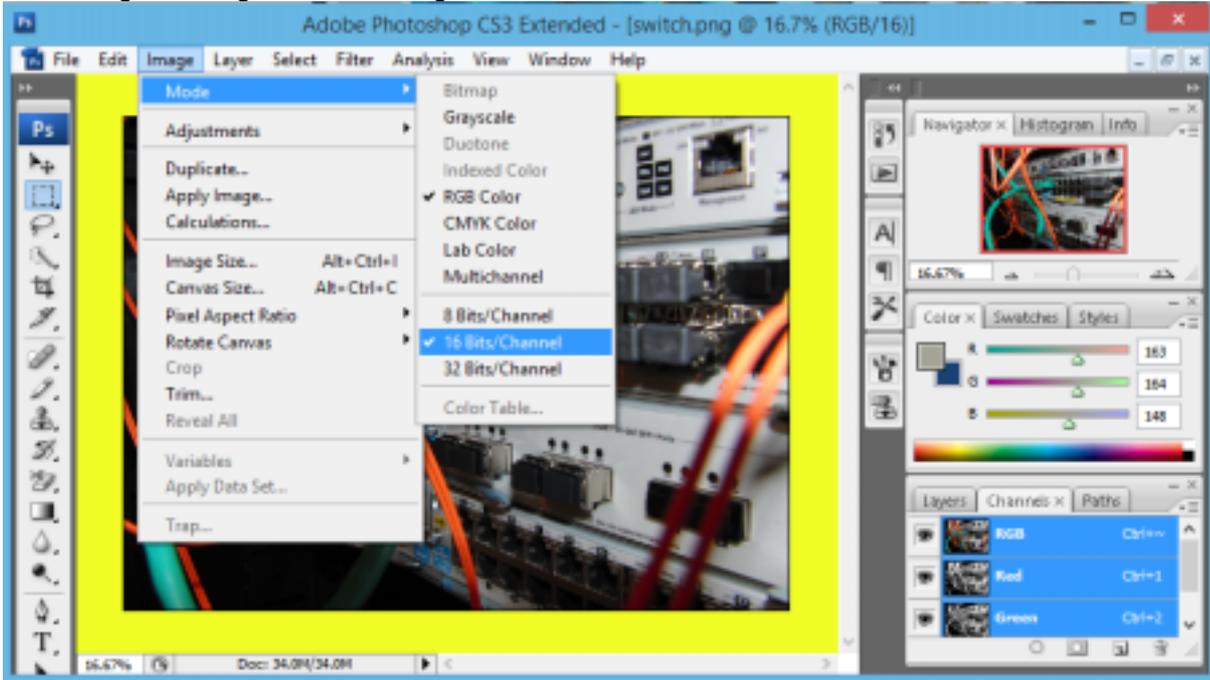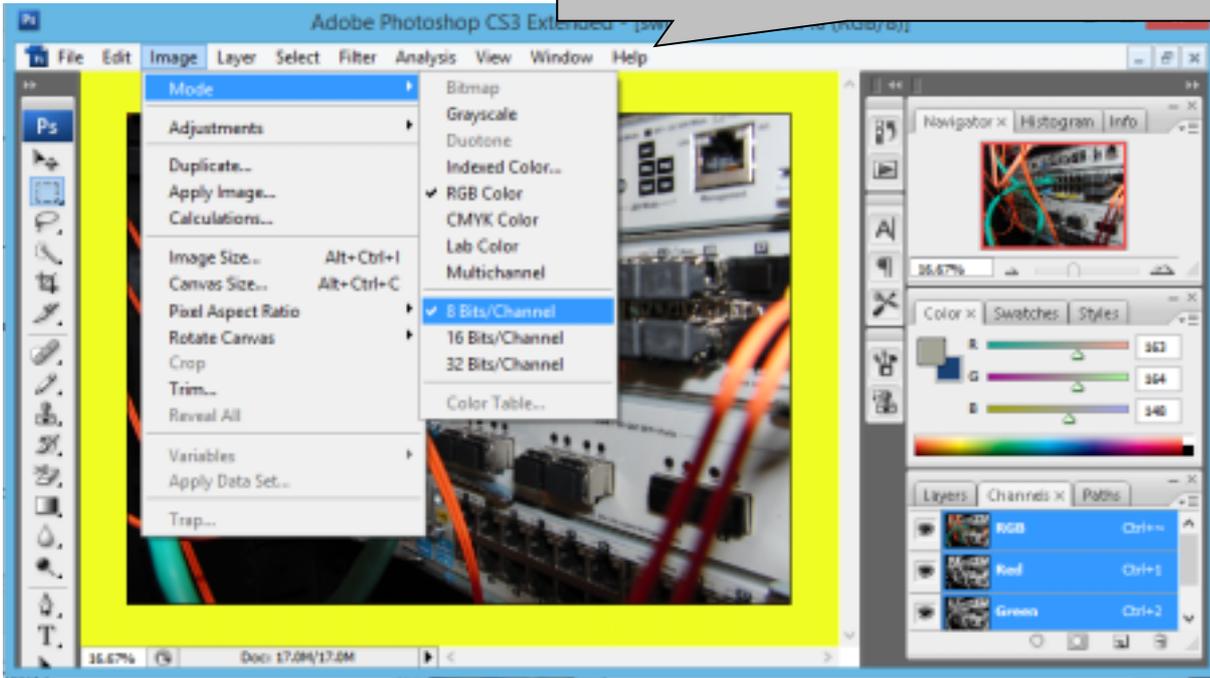
This document consists of **11** printed pages.

Evidence 1

Place original image before changes here:

Place image after changes here:

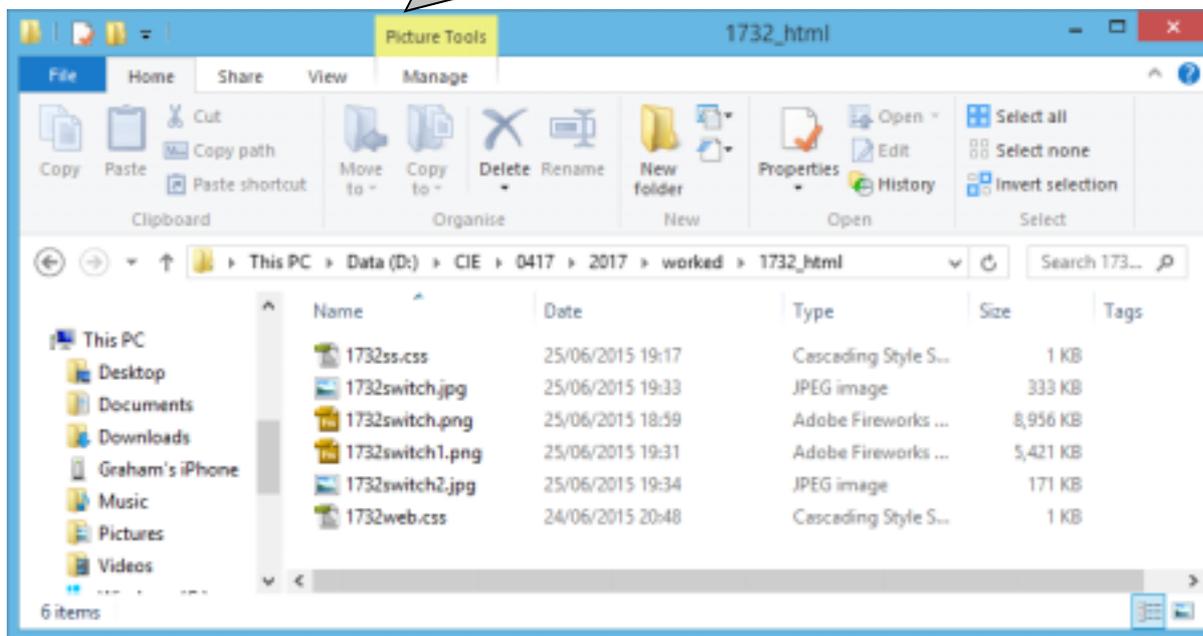Colour depth changed from 16 to 8 bits   1 mark

1732_html	1732web.css, 1732ss.css, 1732switch.png	
	Visible with file sizes	1 mark
	jpg/gif/png saved with reduced file size	1 mark

Evidence 2

Place image of folder showing fo̶l̶d̶e̶r̶,̶ ̶a̶l̶l̶ file names, extensions and sizes:

Evaluation; (4 from)	1 mark each
Changed from PNG to JPG/GIF format	
Changed to 8 bits/channel	
To reduce storage space/file size	
To reduce image transmission/upload/download time	
8 bits per channel reduces transmission time by about ½.	
Reduced image quality may not be suitable for web page	

Evidence 3

Place your evaluation here:

File has been changed from PNG file settings of 16 bits/channel to a JPG/GIF file of 8 bits per channel. This reduces storage space and image transmission time by about ½.

Evidence 4

Place screenshot of the cropped image here:

Cropped   to show middle 1/3 only   1 mark

Comments	/* Candidate details */	1 mark
table	width:600px	1 mark
	margin-left:auto	1 mark
	margin-right:auto	1 mark
h1	color: #000080	1 mark
	font-family: Chalkduster	1 mark
	,Verdana	1 mark
	,sans-serif	1 mark
	font-size:30pt	1 mark
	text-align:center	1 mark
h2,h3,li	font-family:Arial,sans-serif	1 mark
font-family	one style set for all 3 styles	1 mark
h2,li	font-size:16pt	1 mark
font-size	one style set for these 2 styles	1 mark
h3	font-size:14pt	1 mark
	font-style:italic	1 mark
CSS syntax	Including ; between properties	1 mark

Evidence 5

1732ss9999.css - Notepad

File   Edit   Format   View   Help

```
/*A Candidate,ZZ999,9999*/

table      {width:600px;
            margin-left:auto;
            margin-right:auto}
h1         {color:#000080;
            font-family:Chalkduster,Verdana,sans-serif;
            font-size:30pt;
            text-align:center}
h2,h3,li   {font-family:Arial,sans-serif}
h2,li      {font-size:16pt}
h3         {font-size:14pt;
            font-style:italic}
```
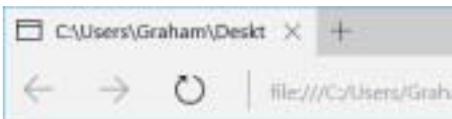
Browser	In browser	1 mark
Table	3 columns & 4 rows	1 mark
	borders visible	1 mark
1st row	**Uploading and publishing a website**	1 mark
	as h1	1 mark
2nd row	**The acronym ftp stands for:**	1 mark
	File Transfer Protocol	1 mark
	image 1732img.jpg	1 mark
3rd row	Correct text in left cell	1 mark
	3+ answers as numbered list	1 mark
4th row	Website created by: & name & numbers	1 mark
Left column	Rows 2-4 set as style h3	1 mark
2nd column	Row 2 set as style h2	1 mark
(3 from):		1 mark each
	FTP client software	
	All files in one folder	
	Host Name/URL/IP address for ftp	
	Host port to be used for upload	
	Username and password	

Evidence 6

Evidence 7

```
<!DOCTYPE html>
<html>
 <head>
  <link rel="stylesheet" href="1732web.css">
  <link rel="stylesheet" href="1732ss9999.css">
 </head>
 <body>
   <table border="1">
    <tr>
     <td colspan=3><h1>Uploading and publishing a website</h1>
     </td>
    </tr>
    <tr>
     <td><h3>The acronym ftp stands for:</h3>
     </td>
     <td><h2>File Transfer Protocol</h2>
     </td>
     <td rowspan=3>
        <img src="1732img.jpg" alt="Image of a switch" style="width:200px;">
     </td>
    </tr>
    <tr>
     <td><h3>Here are 3 things needed to upload and publish the content of
a website using ftp:</h3>
     </td>
     <td>
       <ol>
      <li>FTP client software</li>
      <li>All files in one folder</li>
      <li>Host Name for FTP</li>
      <li>Host port to be used for upload</li>
      <li>Username & password</li>
       </ol>
     </td>
    </tr>
    <tr>
     <td colspan=2>
       <h3>Website created by: A Candidate, ZZ999, 9999</h3>
     </td>
    </tr>
   </table>
 </body>
</html>
```

Callout annotations:

Stylesheet	1732web.css attached	1 mark
	1732ss????.css attached below web.css	1 mark
	head and body syntax correct	1 mark

colspan=3   1 mark

2nd row   3rd <td> rowspan=3   1 mark

| Image | Resized to 200px wide | 1 mark |
| Image | Appropriate alt text attributes | 1 mark |

Numbered list visible (set <ol>) 1 mark

Row 4   colspan=2   1 mark

Evidence 8

Function	=AVERAGEIF() or equivalent	1 mark
	Correct ranges and cell reference	1 mark
	Replicated for all regions	1 mark

=D4	=AVERAGEIF($D$4:$D$64,G3,$E$4:$E$64)
=D8	=AVERAGEIF($D$4:$D$64,G4,$E$4:$E$64)
=D22	=AVERAGEIF($D$4:$D$64,G5,$E$4:$E$64)
=D35	=AVERAGEIF($D$4:$D$64,G6,$E$4:$E$64)
=D43	=AVERAGEIF($D$4:$D$64,G7,$E$4:$E$64)
=D54	=AVERAGEIF($D$4:$D$64,G8,$E$4:$E$64)
=D60	=AVERAGEIF($D$4:$D$64,G9,$E$4:$E$64)

Evidence 9

Chart type	Bar chart with correct data	1 mark
	Titled and axes fully labelled	1 mark

Average download speed for each region
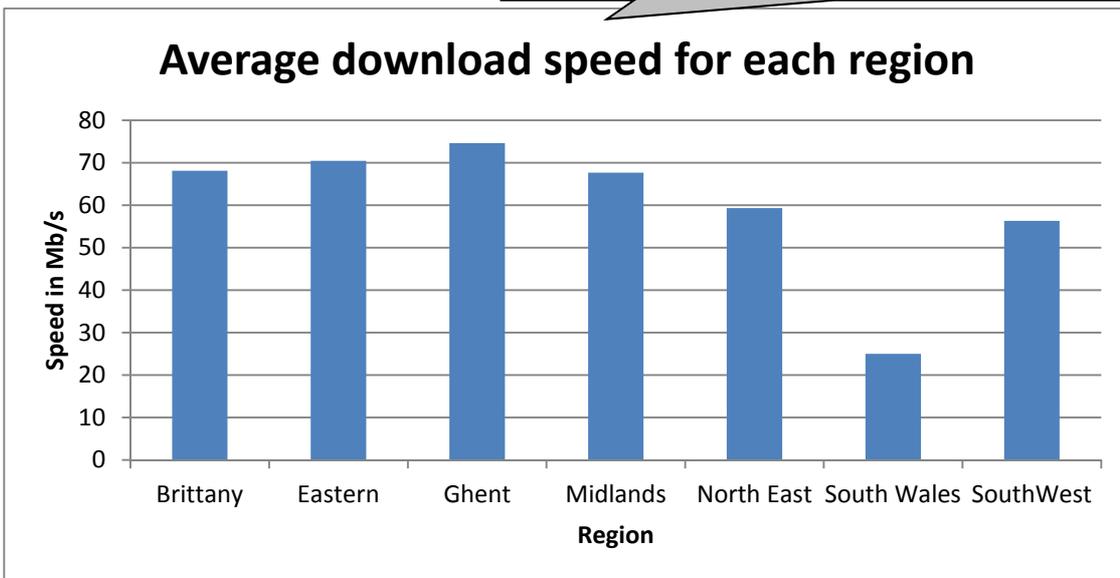
Provider	VLOOKUP () used	1 mark
	Correct relative lookup reference – B4	1 mark
	Contents of file '1732Provider.csv'	1 mark
	Range !$A$2:$B$30 with abs ref	1 mark
	Correct return column 2	1 mark
	,False for correct only / sorted data	1 mark
Printout	Landscape, fully visible, A1-F18 only	1 mark
	Row and column headings displayed	1 mark
Replication	Formula replicated correctly	1 mark

Step 17

	A	B	Provider	Region	Download	Upload
1			Broadband speed test data			
2					Speed (in Mb/s)	
3	Code	PCode	Provider	Region	Download	Upload
4	EN1	F	=VLOOKUP(B4,'D:\CIE\0417\2017\[1732Provider.csv]1732Provider'!$A$2:$B$30,2,FALSE)	Eastern	43.88	16.61
5	EN2	V	=VLOOKUP(B5,'D:\CIE\0417\2017\[1732Provider.csv]1732Provider'!$A$2:$B$30,2,FALSE)	Eastern	97.06	8.51
6	EN3	B	=VLOOKUP(B6,'D:\CIE\0417\2017\[1732Provider.csv]1732Provider'!$A$2:$B$30,2,FALSE)	North East	45.9	7.98
7	EN4	S	=VLOOKUP(B7,'D:\CIE\0417\2017\[1732Provider.csv]1732Provider'!$A$2:$B$30,2,FALSE)	North East	61.7	11.84
8	EN5	X	=VLOOKUP(B8,'D:\CIE\0417\2017\[1732Provider.csv]1732Provider'!$A$2:$B$30,2,FALSE)	North East	60.3	9.56
9	EN6	V	=VLOOKUP(B9,'D:\CIE\0417\2017\[1732Provider.csv]1732Provider'!$A$2:$B$30,2,FALSE)	North East	161.75	22.35
10	EN7	K	=VLOOKUP(B10,'D:\CIE\0417\2017\[1732Provider.csv]1732Provider'!$A$2:$B$30,2,FALSE)	North East	57.55	9.51
11	EN8	P	=VLOOKUP(B11,'D:\CIE\0417\2017\[1732Provider.csv]1732Provider'!$A$2:$B$30,2,FALSE)	North East	82.85	16.07
12	EN9	AB	=VLOOKUP(B12,'D:\CIE\0417\2017\[1732Provider.csv]1732Provider'!$A$2:$B$30,2,FALSE)	North East	39.2	5.84
13	EN10	E	=VLOOKUP(B13,'D:\CIE\0417\2017\[1732Provider.csv]1732Provider'!$A$2:$B$30,2,FALSE)	North East	50.55	8.11
14	EN11	A	=VLOOKUP(B14,'D:\CIE\0417\2017\[1732Provider.csv]1732Provider'!$A$2:$B$30,2,FALSE)	North East	61.5	10.3
15	EN12	T	=VLOOKUP(B15,'D:\CIE\0417\2017\[1732Provider.csv]1732Provider'!$A$2:$B$30,2,FALSE)	North East	30.2	4.54
16	EN13	O	=VLOOKUP(B16,'D:\CIE\0417\2017\[1732Provider.csv]1732Provider'!$A$2:$B$30,2,FALSE)	North East	69	13.3
17	EN14	C	=VLOOKUP(B17,'D:\CIE\0417\2017\[1732Provider.csv]1732Provider'!$A$2:$B$30,2,FALSE)	North East	43.8	6.26
18	EN15	Q	=VLOOKUP(B18,'D:\CIE\0417\2017\[1732Provider.csv]1732Provider'!$A$2:$B$30,2,FALSE)	North East	41.95	5.89

Footer	Name and numbers in centre	1 mark

A Candidate ZZ999 9999

Step 18

Inserted	2 new rows at top of page	1 mark
Top row	Merge cells A1 to F1, centre aligned	1 mark
	White 24 point	1 mark
	Serif font	1 mark
	Black background	1 mark
Cells A1 & E2	Broadband speed test data	
	Speed (in Mb/s) 100% correct	1 mark
	Merged cell E2:F2 right aligned	1 mark
	Cell E2 formatted as subtitle	1 mark
	Fits single portrait page wide, fully visible with no row or column headings	1 mark

Broadban...

Speed (in Mb/s)

Code	PCode	Provider	Region	Download	Upload
EN1	F	ECC	Eastern	43.88	16.61
EN2	V	Virgin media	Eastern	97.06	8.51
EN3	B	BT	North East	49.9	7.98
EN4	S	Sky	North East	61.7	11.84
EN5	X	TalkTalk	North East	60.3	9.56
EN6	V	Virgin media	North East	161.75	22.35
EN7	K	Kcom	North East	57.55	9.51
EN8	P	Plusnet	North East	82.85	16.07
EN9	AB	Tiscali	North East	39.2	5.84
EN10	E	EE	North East	50.55	8.11
EN11	A	BE	North East	61.5	10.3
EN12	T	3	North East	30.2	4.54
EN13	O	Orange	North East	69	13.3
EN14	C	Connexin	North East	43.8	6.26
EN15	Q	Quickline	North East	41.95	5.89
EN16	L	Vodaphone	North East	56.3	8.76
EN17	U	Tmobile	North East	23.7	4.74
EN18	B	BT	Midlands	45.8	9.16
EN19	S	Sky	Midlands	56.7	10.84
EN20	X	TalkTalk	Midlands	50.4	9.58
EN21	V	Virgin media	Midlands	143.15	18.63
EN22	P	Plusnet	Midlands	59.75	9.45
EN23	AB	Tiscali	Midlands	33	4.1
EN24	E	EE	Midlands	57.2	9.94
EN25	A	BE	Midlands	66.7	12.84
EN26	T	3	Midlands	72.7	12.04
EN27	O	Orange	Midlands	81.2	14.24
EN28	U	Tmobile	Midlands	63.05	11.11
EN29	Z	Zen	Midlands	82.3	15.46
EN30	B	BT	SouthWest	56.25	9.75
EN31	S	Sky	SouthWest	57.05	8.91
EN32	X	TalkTalk	SouthWest	61.8	11.36
EN33	V	Virgin media	SouthWest	149.95	19.99
EN34	P	Plusnet	SouthWest	39	7.8
EN35	AB	Tiscali	SouthWest	32.95	6.09
EN36	E	EE	SouthWest	56.55	8.81
EN37	A	BE	SouthWest	35.15	5.03
EN38	T	3	SouthWest	35.35	5.57
EN39	G	Eclipse	SouthWest	39.1	5.82
WA1	B	BT	South Wales	33.1	5.62
WA3	X	TalkTalk	South Wales	21.3	2.26
WA4	V	Virgin media	South Wales	51.7	8.34
WA6	P	Plusnet	South Wales	11.5	1.3
WA7	AB	Tiscali	South Wales	29.45	4.89
WA8	E	EE	South Wales	27.25	3.45
WA9	A	BE	South Wales	16.8	1.86

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WA10	T	3	South Wales	24.35	3.87
WA11	O	Orange	South Wales	33.25	5.15
WA16	Z	Zen	South Wales	1.45	-0.21
FR1	O	Orange	Brittany	48.55	9.21
FR2	M	SAS	Brittany	83.35	15.17
FR3	Y	SFR	Brittany	43	6.6
FR4	N	Numericable	Brittany	97.65	18.03
FR5	W	Wifirst	Brittany	68.1	11.12
BE1	AA	Telenet	Ghent	77	13.9
BE2	H	Belgacom	Ghent	82.55	15.01
BE3	R	Scarlet	Ghent	45.8	8.66
BE4	AC	Surf	Ghent	41.25	5.75
BE5	J	UPC Austria	Ghent	138.65	17.73
BE6	I	Belnet	Ghent	69.75	11.95
BE7	D	Destiny	Ghent	67.4	10.98

A Candidate, ZZ999, 9999

| Searching	1732logo.jpg resized in correct place	1 mark
	Virgin media or 3 or Orange or Tmobile	1 mark
	Download >30	1 mark
	Sorted ascending on Provider	1 mark

Step 20

Broadband speed test data

Speed test

Speed (in Mb/s)

Code	PCode	Provider	Region	Download	Upload
EN12	T	3	North East	30.2	4.54
EN26	T	3	Midlands	72.7	12.04
EN38	T	3	SouthWest	35.35	5.57
EN13	O	Orange	North East	69	13.3
EN27	O	Orange	Midlands	81.2	14.24
WA11	O	Orange	South Wales	33.25	5.15
FR1	O	Orange	Brittany	48.55	9.21
EN28	U	Tmobile	Midlands	63.05	11.11
EN2	V	Virgin media	Eastern	97.06	8.51
EN6	V	Virgin media	North East	161.75	22.35
EN21	V	Virgin media	Midlands	143.15	18.63
EN33	V	Virgin media	SouthWest	149.95	19.99
WA4	V	Virgin media	South Wales	51.7	8.34

2nd extract	Also upload speed >10	1 mark
	Sorted descending on region then download	1 mark

Step 21

Broadband speed test data

Speed test
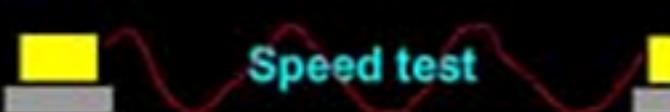
Speed (in Mb/s)

Code	PCode	Provider	Region	Download	Upload
EN33	V	Virgin media	SouthWest	149.95	19.99
EN6	V	Virgin media	North East	161.75	22.35
EN13	O	Orange	North East	69	13.3
EN21	V	Virgin media	Midlands	143.15	18.63
EN27	O	Orange	Midlands	81.2	14.24
EN26	T	3	Midlands	72.7	12.04
EN28	U	Tmobile	Midlands	63.05	11.11