[redacted] arch - 25 March

tivated student, who takes full responsibility for your learning. A reflective learner, who recognises areas for development and is committed to personal improvement. An organised learner who always completes class work and homework to a very high standard.

Question **1**

Correct

Mark 2.00 out of 2.00

How many different objects can be represented in computer memory using 8 bits?

Answer: 256 ✔

The correct answer is: 256

Response history

Step	Time	Action	State	Marks
1	27/03/22, 13:47	Started	Not yet answered	
2	27/03/22, 13:48	Saved: 256	Answer saved	
3	**27/03/22, 16:15**	**Attempt finished**	**Correct**	**2.00**

Question **2**

Correct

Mark 3.00 out of 3.00

What is the minimum number of bits required to represent the hexadecimal number **7E6** in binary? (Enter **only the number** as your answer i.e. don't add units)

Answer: 11 ✔

The correct answer is: 11

Response history

Step	Time	Action	State	Marks
1	27/03/22, 13:47	Started	Not yet answered	
2	27/03/22, 13:51	Saved: 4096	Answer saved	
3	27/03/22, 16:10	Saved: 11	Answer saved	
4	**27/03/22, 16:15**	**Attempt finished**	**Correct**	**3.00**

Question **3**

Correct

Mark 3.00 out of 3.00

Convert the base-5 number 4322 to base-25

Answer: NC ✔

The correct answer is: NC

Response history

Step	Time	Action	State	Marks
1	27/03/22, 13:47	Started	Not yet answered	
2	27/03/22, 13:52	Saved: NC	Answer saved	
3	**27/03/22, 16:15**	**Attempt finished**	**Correct**	**3.00**

Question **4**

Correct

Mark 4.00 out of 4.00

Convert the decimal number 1521 into octal.

Answer: 2761 ✔

The correct answer is: 2761

Response history

Step	Time	Action	State	Marks
1	27/03/22, 13:47	Started	Not yet answered	
2	27/03/22, 14:06	Saved: 2761	Answer saved	
3	**27/03/22, 16:15**	**Attempt finished**	**Correct**	**4.00**

Question **5**

Correct

Mark 2.00 out of 2.00

Compute the following octal addition: 746.12+134.25

Answer: 1102.37 ✔

The correct answer is: 1102.37

Response history

Step	Time	Action	State	Marks
1	27/03/22, 13:47	Started	Not yet answered	
2	27/03/22, 16:12	Saved: 1102.37	Answer saved	
3	**27/03/22, 16:15**	**Attempt finished**	**Correct**	**2.00**

Question **6**

Correct

Mark 4.00 out of 4.00

Convert the decimal number 215 to Base-16.

Answer: D7 ✔

The correct answer is: D7

Response history

Step	Time	Action	State	Marks
1	27/03/22, 13:47	Started	Not yet answered	
2	27/03/22, 14:20	Saved: D7	Answer saved	
3	**27/03/22, 16:15**	**Attempt finished**	**Correct**	**4.00**

Question **7**

Correct

Mark 3.00 out of 3.00

Given a number in **base-2 A = 1101.1001** and number in **base-4 B = 21.23**

Find **A-B in base 10** (Rounded to 3 decimal points)

Answer: 3.875 ✔

The correct answer is: 3.875

Response history

Step	Time	Action	State	Marks
1	27/03/22, 13:47	Started	Not yet answered	
2	27/03/22, 14:37	Saved: 3.875	Answer saved	
3	**27/03/22, 16:15**	**Attempt finished**	**Correct**	**3.00**

Question **8**

Correct

Mark 2.00 out of 2.00

Convert the following decimal number 2563 to hexadecimal.

a. A30

b. 3A0

c. 30A

d. A03 ✔

Your answer is correct.

The correct answer is:
A03

Response history

Step	Time	Action	State	Marks
1	27/03/22, 13:47	Started	Not yet answered	
2	27/03/22, 14:39	Saved: A03	Answer saved	
3	**27/03/22, 16:15**	**Attempt finished**	**Correct**	**2.00**

Question **9**

Correct

Mark 3.00 out of 3.00

Calculate the difference between two numbers, the first number is in binary and the second is in octal. Give your answer in **hexadecimal**.

1101000000 (bin) - 54 (octal) =

Answer: 314 ✔

The correct answer is: 314

Response history

Step	Time	Action	State	Marks
1	27/03/22, 13:47	Started	Not yet answered	
2	27/03/22, 14:49	Saved: 314	Answer saved	
3	**27/03/22, 16:15**	**Attempt finished**	**Correct**	**3.00**

Question **10**

Correct

Mark 2.00 out of 2.00

The following numbers are written in binary fractions:

A = 11110011.1101 and B = 10011001.11.

what is A-B?

Answer: 1011010.0001 ✔

The correct answer is: 1011010.0001

Response history

Step	Time	Action	State	Marks
1	27/03/22, 13:47	Started	Not yet answered	
2	27/03/22, 14:52	Saved: 1011010.0001	Answer saved	
3	**27/03/22, 16:15**	**Attempt finished**	**Correct**	**2.00**

Question **11**

Correct

Mark 2.00 out of 2.00

$(0.28)_{10}$ represented in the hexadecimal number system is:

a. $0.\overline{47AE1}$ ✔

b. 0.28

c. $0.47AE1$

d. $0.\overline{1EA74}$

Your answer is correct.

The correct answer is:
$0.\overline{47AE1}$

Response history

Step	Time	Action	State	Marks
1	27/03/22, 13:47	Started	Not yet answered	
2	27/03/22, 14:54	Saved: [0.\overline{47AE1}]	Answer saved	
3	**27/03/22, 16:15**	**Attempt finished**	**Correct**	**2.00**

Question **12**

Correct

Mark 3.00 out of 3.00

Calculate the answer to the equation (give answer in base-16)

300 (base-8) **+ 28.125** (base-10) **- 11100.001** (base-2)

Answer: C0 ✔

The correct answer is: C0

Response history

Step	Time	Action	State	Marks
1	27/03/22, 13:47	Started	Not yet answered	
2	27/03/22, 15:01	Saved: C0	Answer saved	
3	**27/03/22, 16:15**	**Attempt finished**	**Correct**	**3.00**

Question **13**

Correct

Mark 4.00 out of 4.00

Express the base-6 fraction 0.355 as a fraction in base-10.

Provide your answer in radix point form rounded off two decimal places (e.g. 6.32).

Answer: 0.66 ✔

The correct answer is: 0.66

Response history

Step	Time	Action	State	Marks
1	27/03/22, 13:47	Started	Not yet answered	
2	27/03/22, 15:02	Saved: 0.66	Answer saved	
3	**27/03/22, 16:15**	**Attempt finished**	**Correct**	**4.00**

Question **14**

Correct

Mark 1.00 out of 1.00

How are bases 8 and 2 related, and what does that tell us about the conversion between either bases?

Select one:

- A. 8 is a power of 2. And so base 8 digits can be read off in binary and three base 2 digits can be read off in octal. ✔
- B. 8 is a power of 2. And so base 8 digits can be read off in binary but base 2 digits can't be read off in octal.
- C. 2 is a power of 8. And so base 2 digits can be read off in octal but base 8 digits cannot be read off in binary
- D. 2 is a power of 8. And so three base 2 digits can be read off in octal and base 8 digits can be read off in binary.
- E. 2 is a power of 8. And so base 2 digits cannot be read off in octal nor can base 8 digits be read off in binary.

Your answer is correct.

The correct answer is:
8 is a power of 2. And so base 8 digits can be read off in binary and three base 2 digits can be read off in octal.

Response history

Step	Time	Action	State	Marks
1	27/03/22, 13:47	Started	Not yet answered	
2	27/03/22, 15:05	Saved: 8 is a power of 2. And so base 8 digits can be read off in binary and three base 2 digits can be read off in octal.	Answer saved	
3	**27/03/22, 16:15**	**Attempt finished**	**Correct**	**1.00**

Question **15**

Correct

Mark 2.00 out of 2.00

Calculate 201 + 112 in base 3

Answer: 1020 ✔

The correct answer is: 1020

Response history

Step	Time	Action	State	Marks
1	27/03/22, 13:47	Started	Not yet answered	
2	27/03/22, 16:12	Saved: 1020	Answer saved	
3	**27/03/22, 16:15**	**Attempt finished**	**Correct**	**2.00**

Question **16**

Correct

Mark 5.00 out of 5.00

Convert the decimal number 1521 into binary.

Answer: 10111110001 ✔

The correct answer is: 10111110001

Response history

Step	Time	Action	State	Marks
1	27/03/22, 13:47	Started	Not yet answered	
2	27/03/22, 15:09	Saved: 10111110001	Answer saved	
3	**27/03/22, 16:15**	**Attempt finished**	**Correct**	**5.00**

Question **17**

Correct

Mark 3.00 out of 3.00

Express the binary fraction 11.011 as a fraction in base-10.

Provide your answer in radix point form (e.g. 6.32).

Round of two places to the right of the radix point

Answer: 3.38 ✔

The correct answer is: 3.38

Response history

Step	Time	Action	State	Marks
1	27/03/22, 13:47	Started	Not yet answered	
2	27/03/22, 15:11	Saved: 3.375	Answer saved	
3	27/03/22, 16:13	Saved: 3.38	Answer saved	
4	**27/03/22, 16:15**	**Attempt finished**	**Correct**	**3.00**

Question **18**

Correct

Mark 2.00 out of 2.00

Compute the following in binary:

1001.1001 – 110.11

Answer: 10.1101 ✔

The correct answer is: 10.1101

Response history

Step	Time	Action	State	Marks
1	27/03/22, 13:47	Started	Not yet answered	
2	27/03/22, 15:13	Saved: 10.1101	Answer saved	
3	**27/03/22, 16:15**	**Attempt finished**	**Correct**	**2.00**

Question **19**

Correct

Mark 2.00 out of 2.00

Convert the base 10 number 675 to Octal and subtract it from the Octal number 1747.

Separate both answers with a comma.

Answer: 1243, 504 ✔

The correct answer is: 1243, 504

Response history

Step	Time	Action	State	Marks
1	27/03/22, 13:47	Started	Not yet answered	
2	27/03/22, 15:16	Saved: 1243, 504	Answer saved	
3	**27/03/22, 16:15**	**Attempt finished**	**Correct**	**2.00**

Question **20**

Correct

Mark 2.00 out of 2.00

Convert the decimal number 215 to Base-5.

Answer: 1330 ✔

The correct answer is: 1330

Response history

Step	Time	Action	State	Marks
1	27/03/22, 13:47	Started	Not yet answered	
2	27/03/22, 15:17	Saved: 1330	Answer saved	
3	**27/03/22, 16:15**	**Attempt finished**	**Correct**	**2.00**

Question **21**

Correct

Mark 2.00 out of 2.00

Solve the following addition in base 11: A.22 + 10.49. (Give your answer in base 11 and to one place on the right side of the radix point. e.g 3A.3)

Answer: 1A.7 ✔

The correct answer is: 1A.7

Response history

Step	Time	Action	State	Marks
1	27/03/22, 13:47	Started	Not yet answered	
2	27/03/22, 15:18	Saved: 1A.7	Answer saved	
3	**27/03/22, 16:15**	**Attempt finished**	**Correct**	**2.00**

Question **22**

Correct

Mark 3.00 out of 3.00

Calculate the sum of two numbers, the first number is in octal and the second is in hexadecimal. Give your answer in **binary**.

644 (octal) + 1A4 (hex) =

Answer: 1101001000 ✔

The correct answer is: 1101001000

Response history

Step	Time	Action	State	Marks
1	27/03/22, 13:47	Started	Not yet answered	
2	27/03/22, 15:24	Saved: 1101001000	Answer saved	
3	**27/03/22, 16:15**	**Attempt finished**	**Correct**	**3.00**

Question **23**

Correct

Mark 5.00 out of 5.00

Convert the base-27 number 27LI to base-3.

Answer: 2021210200 ✔

The correct answer is: 2021210200

Response history

Step	Time	Action	State	Marks
1	27/03/22, 13:47	Started	Not yet answered	
2	27/03/22, 15:26	Saved: 2021210200	Answer saved	
3	**27/03/22, 16:15**	**Attempt finished**	**Correct**	**5.00**

Question **24**

Correct

Mark 3.00 out of 3.00

Given a word "DEAD" , if DEAD were to be a number in base-16:

When converted to binary what would be the minimum amount of bits needed to represent DEAD

Answer: 16 ✔

The correct answer is: 16

Response history

Step	Time	Action	State	Marks
1	27/03/22, 13:47	Started	Not yet answered	
2	27/03/22, 15:29	Saved: 65536	Answer saved	
3	27/03/22, 16:14	Saved: 16	Answer saved	
4	**27/03/22, 16:15**	**Attempt finished**	**Correct**	**3.00**

Question **25**

Correct

Mark 3.00 out of 3.00

Convert the hexadecimal number **12B.A** to binary.

Answer: 100101011.101 ✔

The correct answer is: 100101011.101

Response history

Step	Time	Action	State	Marks
1	27/03/22, 13:47	Started	Not yet answered	
2	27/03/22, 15:30	Saved: 100101011.101	Answer saved	
3	**27/03/22, 16:15**	**Attempt finished**	**Correct**	**3.00**

Question **26**

Correct

Mark 2.00 out of 2.00

Convert binary number 111001 into an octal number and sum that answer with 765 using octal addition.

Answer: 1056 ✔

111001 in binary = 71 in octal

Therefore, 71 + 765 = 1056 in octal

The correct answer is: 1056

Response history

Step	Time	Action	State	Marks
1	27/03/22, 13:47	Started	Not yet answered	
2	27/03/22, 15:34	Saved: 1056	Answer saved	
3	**27/03/22, 16:15**	**Attempt finished**	**Correct**	**2.00**

Question **27**

Correct

Mark 2.00 out of 2.00

Convert the base-4 number 1232 to binary.

Answer: 1101110 ✔

The correct answer is: 1101110

Response history

Step	Time	Action	State	Marks
1	27/03/22, 13:47	Started	Not yet answered	
2	27/03/22, 15:39	Saved: 1101110	Answer saved	
3	**27/03/22, 16:15**	**Attempt finished**	**Correct**	**2.00**

Question **28**

Correct

Mark 3.00 out of 3.00

Express the binary fraction 100.101 as a fraction in base-10.

Provide your answer in radix point form (e.g. 6.32).

Round of two places to the right of the radix point

Answer: 4.63 ✔

The correct answer is: 4.63

Response history

Step	Time	Action	State	Marks
1	27/03/22, 13:47	Started	Not yet answered	
2	27/03/22, 15:41	Saved: 4.63	Answer saved	
3	**27/03/22, 16:15**	**Attempt finished**	**Correct**	**3.00**

Question **29**

Correct

Mark 3.00 out of 3.00

Convert the octal number 135 to hexadecimal.

Answer: 5D ✔

The correct answer is: 5D

Response history

Step	Time	Action	State	Marks
1	27/03/22, 13:47	Started	Not yet answered	
2	27/03/22, 15:45	Saved: 5D	Answer saved	
3	**27/03/22, 16:15**	**Attempt finished**	**Correct**	**3.00**

Question **30**

Correct

Mark 3.00 out of 3.00

Convert the following Base-30 number to its Hexadecimal equivalent:

$(RB18.F)_{30}$

Answer: B467A.8 ✔

The correct answer is: B467A.8

Response history

Step	Time	Action	State	Marks
1	27/03/22, 13:47	Started	Not yet answered	
2	27/03/22, 15:45	Saved: B467A.8	Answer saved	
3	**27/03/22, 16:15**	**Attempt finished**	**Correct**	**3.00**

Question **31**

Correct

Mark 1.00 out of 1.00

Which number system makes use of digits 0-9 and letters A-R to represent a number?

a. Base-27

b. Such number system does not exist.

c. Base-28 ✔

d. Base-26

Your answer is correct.

The correct answer is:
Base-28

Response history

Step	Time	Action	State	Marks
1	27/03/22, 13:47	Started	Not yet answered	
2	27/03/22, 15:46	Saved: Base-28	Answer saved	
3	**27/03/22, 16:15**	**Attempt finished**	**Correct**	**1.00**

Question **32**

Correct

Mark 4.00 out of 4.00

Convert the decimal number 1521 into hexadecimal.

Answer: 5F1 ✔

The correct answer is: 5F1

Response history

Step	Time	Action	State	Marks
1	27/03/22, 13:47	Started	Not yet answered	
2	27/03/22, 15:48	Saved: 5F1	Answer saved	
3	**27/03/22, 16:15**	**Attempt finished**	**Correct**	**4.00**

Question **33**

Correct

Mark 2.00 out of 2.00

Compute the following binary subtraction:

110010.1011 - 101.1

Answer: 101101.0011 ✔

The correct answer is: 101101.0011

Response history

Step	Time	Action	State	Marks
1	27/03/22, 13:47	Started	Not yet answered	
2	27/03/22, 15:50	Saved: 101101.0011	Answer saved	
3	**27/03/22, 16:15**	**Attempt finished**	**Correct**	**2.00**

Question **34**

Correct

Mark 3.00 out of 3.00

Given a number in **base-2 A = 1101.1001** and number in **base-4 B = 21.23**

Find **A+B in base 7** (Rounded to 3 figures after the radix point)

Answer: 32.152 ✔

The correct answer is: 32.152

Response history

Step	Time	Action	State	Marks
1	27/03/22, 13:47	Started	Not yet answered	
2	27/03/22, 15:55	Saved: 32.152	Answer saved	
3	**27/03/22, 16:15**	**Attempt finished**	**Correct**	**3.00**

Question **35**

Correct

Mark 1.00 out of 1.00

How many hexadecimal digits can be stored in one byte?

Answer: 2 ✔

Each hexadecimal digit has 4 bits.

A byte has 8 bits.

Hence 8/4 = 2.

The correct answer is: 2

Response history

Step	Time	Action	State	Marks
1	27/03/22, 13:47	Started	Not yet answered	
2	27/03/22, 15:56	Saved: 2	Answer saved	
3	**27/03/22, 16:15**	**Attempt finished**	**Correct**	**1.00**

Question **36**

Correct

Mark 2.00 out of 2.00

What is the smallest base that the number 4821 can be?

- a. 10
- b. 8
- c. 7
- d. 9 ✔

Your answer is correct.

The correct answer is:
9

Response history

Step	Time	Action	State	Marks
1	27/03/22, 13:47	Started	Not yet answered	
2	27/03/22, 15:57	Saved: 9	Answer saved	
3	**27/03/22, 16:15**	**Attempt finished**	**Correct**	**2.00**

Question **37**

Correct

Mark 4.00 out of 4.00

Convert the decimal fraction 0.2 to a fraction in base-3.

NB. Indicate the recurring part in brackets.

Eg. the number 0.222222222 = 0.(2)

Eg. the number 0.66912912912912 = 0.66(912)

Answer: 0.(0121) ✔

The correct answer is: 0.(0121)

Response history

Step	Time	Action	State	Marks
1	27/03/22, 13:47	Started	Not yet answered	
2	27/03/22, 15:58	Saved: 0.(0121)	Answer saved	
3	**27/03/22, 16:15**	**Attempt finished**	**Correct**	**4.00**

Question **38**

Correct

Mark 3.00 out of 3.00

Express the base-3 fraction 211.211 as a fraction in base-10.

Provide your answer in radix point form (e.g. 6.32).

Round off two decimal places.

Answer: 22.81 ✔

The correct answer is: 22.81

Response history

Step	Time	Action	State	Marks
1	27/03/22, 13:47	Started	Not yet answered	
2	27/03/22, 15:59	Saved: 22.81	Answer saved	
3	**27/03/22, 16:15**	**Attempt finished**	**Correct**	**3.00**

Question **39**

Correct

Mark 2.00 out of 2.00

Do the following sum and difference in OCTAL:

(i) 560 + 476

(ii) 560 - 476

Separate both answers with a comma.

- a. 1256, 62 ✔
- b. 1256,62

Your answer is correct.

The correct answers are:
1256, 62,

1256,62

Response history

Step	Time	Action	State	Marks
1	27/03/22, 13:47	Started	Not yet answered	
2	27/03/22, 16:05	Saved: 1256, 62	Answer saved	
3	**27/03/22, 16:15**	**Attempt finished**	**Correct**	**2.00**

Question **40**

Correct

Mark 1.00 out of 1.00

Aside from letters, could one use special characters (such as @, #, $, % etc) to represent the decimal numbers 10 - 17 in base 18?

Select one:

- True ✔
- False

The correct answer is 'True'.

Response history

Step	Time	Action	State	Marks
1	27/03/22, 13:47	Started	Not yet answered	
2	27/03/22, 16:07	Saved: True	Answer saved	
3	**27/03/22, 16:15**	**Attempt finished**	**Correct**	**1.00**

Question **41**

Correct

Mark 2.00 out of 2.00

We can convert from base R to base 10 not from base 10 to base R but we can add numbers in different bases.

Select one:

- True
- False ✔

The correct answer is 'False'.

Response history

Step	Time	Action	State	Marks
1	27/03/22, 13:47	Started	Not yet answered	
2	27/03/22, 16:08	Saved: False	Answer saved	
3	**27/03/22, 16:15**	**Attempt finished**	**Correct**	**2.00**

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