

Lösningar och kommentarer för tentamen 2026-04-17 i DA2005

Del A: flervalsfrågor

1. C
2. D
3. A
4. A, E
5. A
6. D
7. A, D, E
8. B

Del B: kodfrågor

9. Exempellösning:

```
def product_nonzero(ns):
    out = 1

    for n in ns:
        if n != 0:
            out *= n

    return out
```

10. Exempellösningar:

```
def ask_numbers(n):

    l = []

    while True:
        try:
            x = float(input("Write a number: "))
            l.append(x)
            if len(l) == n:
                print("Thank you, you wrote: ",l)
                break
        except:
            print("That is not a number!")

    # Alternativ lösning med index. Obs: for-loop funkar inte, så måste använda while
    def ask_numbers(n):

        l = []
        i = 0

        while (i < n):
            try:
                x = float(input("Write a number: "))
                l.append(x)
                i += 1
            except:
                print("That is not a number!")

        print("Thank you, you wrote: ",l)
```

11. Exempellösningar:

A.

```

def mask(s1,s2):
    out = ""

    while s1 != "":
        if s2 == "":
            out += s1
            break
        elif s1[0] == s2[0]:
            out += "*"
            s1 = s1[1:]
            s2 = s2[1:]
        else:
            out += s1[0]
            s1 = s1[1:]

    return out

```

B.

```

def unmask(s1,s2):
    out = ""

    for c in s1:
        if c == '*':
            out += s2[0]
            s2 = s2[1:]
        else:
            out += c

    return out

```

12. Exempellösningar:

A.

```

def total_price(d,prices):
    out = 0
    for x in d:
        if x in prices:
            out += d[x] * prices[x]
        else:
            raise ValueError("The item '" + x + "' cannot be found")

    return out

```

B.

(i)

```

class Item():

    def __init__(self,name,y,m,d,p):
        self.name = name
        self.best_before = (y,m,d)
        self.price = p

```

(ii)

```

class Fruit(Item):

    def __init__(self,name,y,m,d,w,ppk):
        super().__init__(name,y,m,d,w*ppk)
        self.weight = w
        self.price_per_kg = ppk

```

Del C: kodfrågor inspirerade av labbarna

13. Exempellösning

```

def averages(infile,outfile):
    try:
        with open(infile,"r") as infile, open(outfile,"w") as outfile:
            rows = 0
            sum = 0
            for r in infile:
                try:
                    x = float(r)
                    rows += 1
                    sum += x
                    outfile.write("Average " + str(rows) + ": " + str(sum/rows) + "\n")
                except ValueError:
                    print("Bad content on row",rows)

    except FileNotFoundError:
        print("File not found")

```

14. Exempellösningar:

A.

```

def hex_to_bin(h):

    out = ""

    for d in h:
        out += hex_digit_to_bin[d]

    # Strip trailing zeroes
    while out[0] == "0":
        out = out[1:]

    return out

```

B.

```

def bin_to_hex(b):

    l = []

    # Split into groups of 4, starting from the end to get the first digit right
    while (len(b) >= 4):
        l.insert(0,b[len(b)-4:])
        b = b[:len(b)-4]

    # Now we might need to do some padding to the leftmost digit
    if len(b) != 0:
        l.insert(0,"0" * (4 - len(b)) + b)

    # Now it is easy to produce the hexadecimal digit
    out = ""

    for d in l:
        out += bin_digit_to_hex[d]

    return out

```