Quinnox Previous Paper Questions

Q1. Q is not equal to zero and k = (Q x n - s)/2.What is n?

(a) (2 x k + s)/Q
(b) (2 x s x k)/Q
(c) (2 x k - s)/Q
(d) (2 x k + s x Q)/Q
(e) (k + s)/Q

Q2. Given an array of length N containing integers between 1 and N, determine if it contains any duplicates.

ANS: [Is there an O(n) time solution that uses only O(1) extra space and does not destroy the original array?]

Q3. 10 : 4 seconds :: ? : 6 minutes

ANS: 900

Q4. What does the hexanumber E78 in radix 7.

(a) 12455
(b) 14153
(c) 14256
(d) 13541
(e) 131112

ANS: (d)

Q5. What is the output of the following program

```
main()
{ int var=25,varp;
```

```
varp=&var;
varp p = 10;
fnc(varp)
printf("%d%d,var,varp);
}
```

(a) 20,55
(b) 35,35
(c) 25,25
(d)55,55

Q6. Answer the questions based on the following program

```
VOID FUNCTION(INT KK)
{KK+=20;
}
VOID FUNCTION (INT K)
INT MM,N=&M
KN = K
KN+-=10;
}
```

Q7. Answer the questions based on the following program

```
STRUCT DOUBLELIST
{ DOUBLE CLINKED
INT DET; LIST VOID
STRUCT PREVIOUS; (BE GIVEN AND A PROCEDURE TO DELETE)
STRUCT NEW; (AN ELEMENT WILL BE GIVEN)
}
DELETE(STRUCT NODE)
{NODE-PREV-NEXT NODE-NEXT;
NODE-NEXT-PREV NODE-PREV;
IF(NODE==HEAD)
NODE
}
```

In what case the prev was

(a) All cases
(b) It does not work for the last element
(c) It does not for the first element
(d) None of these

Q8. Given an array of integers, find the contiguous sub-array with the largest sum.

ANS: Can be done in O(n) time and O(1) extra space. Scan array from 1 to n. Remember the best sub-array seen so far and the best sub-array ending in i.

Q9. Sort an array of size n containing integers between 1 and K, given a temporary scratch integer array of size K.

ANS: Compute cumulative counts of integers in the auxiliary array. Now scan the original array, rotating cycles! [Can someone word this more nicely?]

Q10. a=2, b=3, c=6 Find the value of c/(a+b)-(a+b)/c