

Question 1 (COMPULSORY) [60 marks]

- (a) True
- (b) False (comments are optional in C)
- (c) False (logic errors are not detected by the C compiler)
- (d) value of w is 6
- (e) value is 2.24
- (f) error case
- (g) condition is false
- (h) i is 6
i is 1
- (i) default
default
2
3
default
- (j) correct answer is (j-3) it returns an integer value to the calling function.
- (k) correct answer is (k-1) fname() takes 1 argument of type pointer-to-int and returns a value of type float.
- (l) result is -16
- (m) correct answer is (m-2) arrints[0]+arrints[1]
- (n) True
- (o) element number 1 is 1
element number 2 is 2
element number 3 is 3
element number 4 is 0
element number 5 is 0
- (p) correct answer is (p-3) `y = *ptr1;`
- (q) x is -1 and y is -2
- (r) False (the name of a string is treated by the C compiler as a fixed pointer-to-char whose value is the address of the first array element and which cannot be reassigned)
- (s) `string=YbcdYfghYjklmn`

(t) correct answer is (t-2) if it exists, open datafile.txt for reading only, otherwise return an error.

Question 2 [40 marks]

(a) `int sum = 0, i;
for (i=1; i<= 5; i++) {
 sum = sum + i;
}`

(b) `char f;
/* suppose a value is now entered for f - code not shown */
switch(f) {
 case 'u': printf("unleaded petrol\n"); break;
 case 'p': printf("premium petrol\n"); break;
 case 'd': printf("diesel\n"); break;
 default: printf("incorrect value entered\n"); break;
}`

(c) `int zerofinder(int A[], int size) {
 int j;
 for (j=0; j<size; j++) {if (A[j]==0) {return j;}}
 return -1; /* 0 value not found, since for loop completed */
}`

Question 3 [40 marks]

Answer parts (a) and (b).

**(a) LINE 1: `scanf("%d", intarr+i);`
LINE 2: `total += *(intarr+i);`**

**(b) `#include "stdio.h"`
`void main(void){`
 `char message[80]="I love C programming";`
 `int c_counter(char str[]); /* function prototype */`
 `/* or: put c_counter() before main() */`
 `printf("\'%s\' contains %d c's\n", message, c_counter(message));`
 `}`
 `int c_counter(char s[]){ /* no need to pass in size of array */`
 `int i=0, ct=0; /* local variables to c_counter() */`
 `while (s[i]!='\0'){`
 `if ((s[i]=='c') || (s[i]=='C')){`
 `ct++;`
 `}`
 `i++;`
 `}`
 `return ct;`
 `}`**