

FIRST EXAMINATION IN ENGINEERING
Programme Codes: ENBDF0002, ENBDF0003,
ENBDF0004, ENBDF0005, ENBDF0008, ENBDF0011

COMP1604 COMPUTER SCIENCE, AUTUMN EXAMINATIONS 2006

SOLUTIONS

- 1.(a) True
- (b) False (e.g. could have run-time errors)
- (c) The most widely used tools for developing algorithms are flowcharts and __pseudo-code__ .
- (d) value of w is -3
- (e) value is 1.7321
- (f) exceptional case
- (g) condition is true
- (h) i is 12
i is 3
i is 0
- (i) default
2
3
default
default
- (j) correct answer is (j-2) it does not return a value
- (k) correct answer is (k-3) fname() takes 1 argument of type pointer-to-double and returns a value of type int.
- (l) result is 19
- (m) correct answer is (m-3) arr[0]+arr[2]
- (n) False (compiles ok, up to programmer to not access memory locations that are not part of the array)
- (o) x[0] is 2.00
x[1] is 1.00
x[2] is 0.67
y[0] is 2
y[1] is 1
y[2] is 0
- (p) correct answer is (p-2) *ptr1 = y;
- (q) x is 5 and y is 5
- (r) True
- (s) vowels=YYYou
- (t) correct answer is (t-1) open datafile.txt for appending, creating the file if it doesn't already exist.
- 2.(a) `int i; /* could be: int i=0; */
char string[100];
/* assume string[] is somehow filled with letters, digits, etc */
i=0;`

```

                                fecs-autumn06solns.txt
while (string[i]!='\0'){
    if ((string[i] >= '0') && (string[i] <= '9')){
        printf("%c", string[i]);
    }
    i++;
}

```

```

(b) switch(mark){
    case 10:
    case 9:
    case 8:
    case 7: printf("Excellent\n"); break;
    case 6:
    case 5:
    case 4: printf("Satisfactory\n"); break;
    case 3:
    case 2:
    case 1:
    case 0: printf("Fail\n"); break;
    default:
}

```

```

(c) void nonneg(int array[], int size){
    int i; /* local loop counter */
    for (i=0; i<size; i++){
        if (array[i]<0){
            array[i]=0;
        }
    }
}

```

3.(a) LINE 1: scanf("%d", intarr+i);
 LINE 2: total += *(intarr+i);
 LINE 3: printf("sum of inputs is %d, first input was %d,
 last input was %d\n", total, *intarr, *(intarr+3));

(b)(i) After executing this program, the file output.dat
 contains __2,5,__ .

```

(ii) #include <stdio.h>
void main(void)
{
    FILE *fptr1, *fptr2;
    int inp;
    fptr1 = fopen("input2.dat", "r");
    fptr2 = fopen("output2.dat", "w");
    while (fscanf(fptr1, "%d", &inp)==1){
        if ((inp%2)==0){
            fprintf(fptr2, "%d,", inp);
        }
    }
    fclose(fptr1);
    fclose(fptr2);
}

```