Name of the Student:_____
Max. Marks : 15 Marks **Time : 15 Minutes**

Mark Schemes

Q1.

(a) (i) Molecule/compound/consists/composed/made up of hydrogen and carbon only **(1)**

(ii) C_nH_{2n+2} **(1)**

(iii) C_6H_{14} only **(1)**
Do not credit structures alone or in addition.

3

(b) Chemically similar / react in same way / same chemistry
Differ by CH_2
gradation in physical properties OR specified trend e.g. b.p.
same functional group
Any 2, 2 marks 1 + 1
Not same molecular formula

2

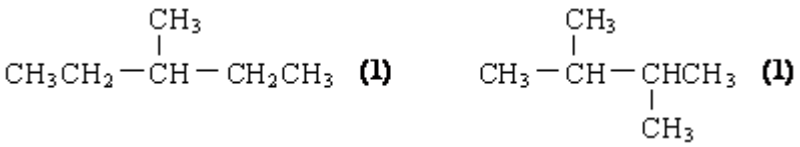
(c) (i) Same molecular formula **(1)**
NOT same Mr

different structural formula / structures **(1)**
(or atoms arranged in different way)
NOT different spatial arrangements
Only credit M2 if M1 correct

(ii) 2-methylpentane **(1)**
2,2-dimethylbutane **(1)**

(iii)

Isomer 3 either order *Isomer 4*



OR correct condensed / structural formula
Penalise "sticks" once
Penalise absence of vertical bonds once
penalise badly drawn bonds once (vertical between H atoms)

6

(d) (i) M1 % by mass of H = 7.7(0)% **(1)**

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M2 mol H = 7.70 / 1 = 7.70
mol C = 92.3 / 12 = 7.69 **(1)**

M3 (ratio 1:1 ∴) CH

Credit variations for M2 e.g. 78 × $\frac{77}{100}$ *= 6*

and $\frac{78}{12} \times \frac{92.3}{100}$ *= 6*

Correct answer = 3 marks

(ii) (CH has empirical mass of 13 and $\frac{78}{13}$ = 6 ∴) C_6H_6 **(1)**

Correct answer 1 mark

4

[15]

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