Self Practice Paper (SPP)





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- 17. The isomeric alcohol which has a chiral carbon atom is :(1) n-butyl alcohol(2) iso-butyl alcohol(3) sec-butyl alcohol(4) tert-butyl alcohol
- **18.** The configurations of the carbon atoms C_2 and C_3 in the following compound are respectively.



(3) R, S

(4) S, R

19. Which of the following will not show geometrical isomerism ?



- **20.** Total number of isomers for CH_3 -CH-CH-CH-CH- CH_3 Br Br (1) 4 (2) 6 (3) 8 (4) 2
- 21 How many stereoisomers of shikonin (a drug for healing of wounds) are possible & how many of them are optically active ?



22 Which of the following compounds is capable of showing geometircal, optical and conformational isomerism.



ĊH₃

ISOMERISM (STEREOISOMERISM)

	(3) 1-Bromopropene		(4) Methylcyclopropane.							
27.	How many different a $C_4H_{10}O?$	Icohols (including optica	al isomers) are possible	e with the molecular formula :						
	(1) 3	(2) 4	(3) 5	(4) 6						
28.	A compound is chiral e (1) a mirror plane is pre (3) a rotation axis exist	ven if esent s	(2) a centre of inversion exists(4) an improper rotation axis is present.							
29.	The achiral species am (1) a car	ong the following is : (2) a screw driver	(3) a screw	(4) a hand						
30.	Conformational change (1) torsional angle	es in a molecule leads to (2) bond angle	change in (3) bond length	(4) all of the above						
31.	Geometrical isomerism results because the molecule : (1) rotates the plane of polarized light (2) has a plane of symmetry (3) has a centre of symmetry (4) has two dissimilar groups attached to both ends of double bond.									
32.	The pair of enantiomer CH_3	s among the following co CH_3	pmpound are : CH₃	H						
	PhH	HBr	PhBr	Br ————————————————————————————————————						
	l Br	l Ph	H H	Ph						
	Ι	Π	III	IV						
	(1) I and IV	(2) II and IV	(3) II and III	(4) I and II						
33.	The number of all types of isomers of chlorobutane is									
	(1) 2.	(2) 4	(3) 6	(4) 5						
34.	(i) $CH_2 = CH - CH_2 - CH = CH_2$ (ii) $CH_2 = CH - CH = CH - CH_3$ (iii) $CH_3 - CH = CH - CH = CH - CH_3$ The numbers of possible geometrical isomers for the above compounds respectively are (1) 0,2,4 (2) 2,2,4 (3) 0,3,3 (4) 0,2,3									
35.	The compound that is a (1) 3-Methyl-3-hexene (3) 2-Phenylpentane	chiral	(2) 1-Chloro-4-methylcyclohexane (4) 1,3-Diisopropylbenzene							
36.	The number of stereois	omers of compound CH	₃ –CH=CH–CH(Br)CH ₃ is	:						
	(1) 2	(2) 3	(3) 4	(4) 6						
37.	The R/S designation fo CH_2Br $H_3C - H$ H - Br	r the following stereoisor	ner of 1,3-Dibromo-2-me	ethylbutane is :						



	Find (1) 2	Find the total no. of fractions obtained. (1) 2 (2) 4					(3) 3			(4) Zero			
	SF	P A	nsv	/ers									
1.	(2)	2.	(3)	3.	(4)	4.	(4)	5.	(2)	6.	(4)	7.	(2)
8.	(2)	9.	(3)	10.	(2)	11.	(3)	12.	(4)	13.	(3)	14.	(4)
15.	(4)	16.	(1)	17.	(3)	18.	(1)	19.	(4)	20.	(2)	21	(2)
22	(1)	23.	(4)	24.	(1)	25.	(2)	26.	(4)	27.	(2)	28.	(3)
29.	(2)	30.	(1)	31.	(4)	32.	(3)	33.	(4)	34.	(4)	35.	(3)
36.	(3)	37.	(1)	38.	(1)	39.	(3)	40.	(4)	41.	(1)	42.	(4)
43.	(4)	44.	(2)	45.	(3)								

SPP Solutions





7.

- **13.** Compounds are diastereomers.
- **14.** When –OH is present at right side of horizontal line & high priority at the top than it is consider as D & if left side then L.

16. $GI = 2^n = 2^2 = 4$

17.
$$H_{3}C - CH_{2} - C_{2}^{+} - OH_{1}^{+}$$

 CH_{3}

СООН Н<u>R</u>ОН 18. НО<u>R</u>Н СНО

Based on RS convention the given compound has RR configuration.

19. Follow conditions of geometrical isomerism.

20. Isomer =
$$2^{n-1} + 2\frac{n-1}{2} = 2^{3-1} + 2\frac{3-1}{2} = 2^2 + 2^1 = 6$$

- **21** There are two stereocentres in the compound, so total stereoisomers = 2^2 = 4. All 4 will be optically active.
- **31.** Due to restricted rotation with two disimilar groups around C = C bond.



33. Chlrorobutane

$$\begin{array}{cccc} CI & CI & CH_3 \\ I & I \\ CH_3 - CH_2 - CH_2 - CH_2 \\ d + \ell \end{array} \begin{array}{c} CH_3 & CH_3 \\ I & I \\ CH_3 - CH_2 - CH_2 \\ d + \ell \end{array} \begin{array}{c} CH_3 & CH_3 \\ CH_3 - CH_2 - CH_3 \\ CH_3 - CH_2 \\ CH_3 - CH_2 \\ CH_3 - CH_3 \\ CH_3 \\ CH_3 - CH_3 \\ CH_$$

Overall 5 isomers

- **34.** Geometrical isomer for (i) = 0, (ii) = 2, (iii) = 3.
- **35.** Only (3) has asymmetric carbon atom.

- **36.** CH₃-CH=CH-CH(Br)CH₃ has 4 stereo isomers, with (Z, R), (Z, S), (E, R) and (E, S) configuration.
- **37.** The given structure has 2R, 3R designation.

$$H_{3}C \xrightarrow{(1)}{(2)} H_{2}Br$$

$$H_{3}C \xrightarrow{(2)} (R) H_{3}H$$

$$H \xrightarrow{(3)} (R) H_{3}$$

$$H \xrightarrow{(4)} CH_{3}$$

- 38. (E,F) and (E,G) are Tautomers(F) and (G) are geometrical diastereomers.
- 41. Ind pair is position isomers and IIIrd pair is chain isomers
- **42.** All the structures have same groups and S–configuration.
- 43. Definition based



