

Answer Keys

1	D	2	B	3	C	4	B	5	C	6	B	7	B
8	B	9	C	10	D	11	C	12	B	13	D	14	C
15	B	16	B	17	A	18	A	19	B	20	C	21	C
22	B	23	C	24	D	25	B	26	B	27	C	28	D
29	A	30	D	31	B	32	B	33	A	34	C	35	B
36	C	37	C	38	A	39	B	40	B	41	C	42	A
43	A	44	D	45	A	46	C	47	C	48	A	49	C
50	A	51	A	52	D	53	C	54	D	55	A	56	B
57	D	58	A	59	B	60	C						

Q.2 (B)

Indian Rhubarb contains anthraquinone glycosides. It grows a strong deep violet fluorescence in u.v light.

Q.3 (C)

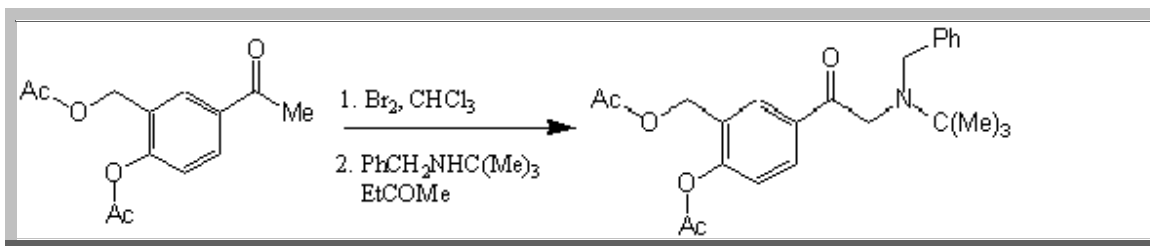
Papaver bracteatum and Papaver orientale has scored more impoillane as it doesn't contain morphin, which causes addiction. % of Thebaine is very high.

Q.5 (C)

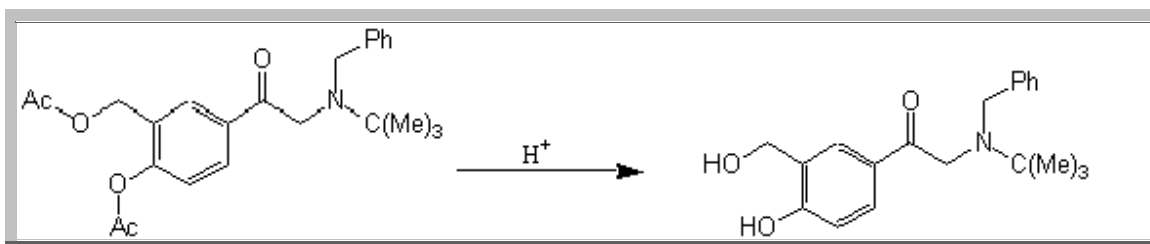
Calcitonin is a hormone secreted by the specialized 'c' cells found in the thyroid follicles. The main action of calcitonin is on bone. It inhibits bone resorption by binding to a specific receptor on osteoelasts inhibiting their action.

Q.8 (B)

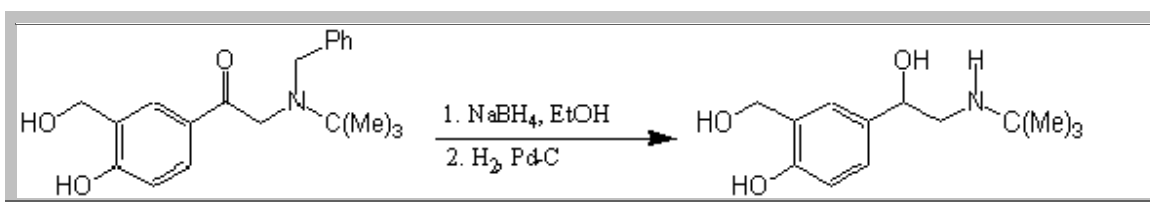
Step 1:



Step 2:



Step 3:



Q.9. (C)

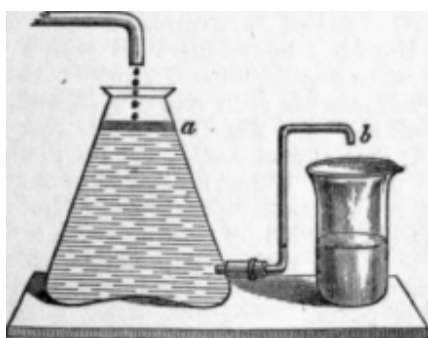
Warfarin consists of a racemic mixture of two active optical isomers—R- and S-forms—each of which is cleared by different pathways. S-warfarin has five times the potency of the R-isomer with respect to vitamin K antagonism.

Q.10 (D)

Cyclodextrin glycosyltransferase (CGTase) was released into the culture fluid by *Bacillus macerans* predominantly in the late stationary phase of growth and during autolysis in the presence of either glucose or starch as a carbon source. Cyclodextrin glycosyltransferase may be the only starch-degrading enzyme in *Bacillus macerans*.

Q.11. (C)

Florentine receiver separates mixture of solvents based on its density.



Eg: The separation of the oil and water is effected by allowing the mixed liquids to drop into a Florentine receiver (see Fig.), when the oil is lighter than water, by which means the latter accumulates at a, and the water flows over by the spout.

Q.14 (C)

Silica gel – Normal phase

N.P. – stationary phase – polar

Mobile phase – non-polar

R.P. – stationary phase – nonpolar

Mobile phase – polar

Silicone oil is non-polar in nature.

Q.15 (B)

Pharmaceutically mid IR region is very important which extends from 4000 – 400cm⁻¹

4000 – 1500cm⁻¹ – Group Frequency region

Below 1500cm⁻¹ – Finger Print region

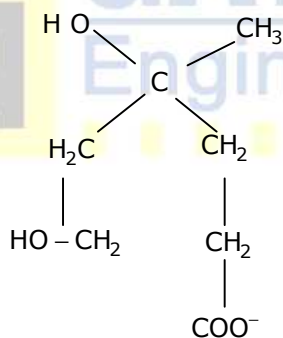
Q.16 (B)

$$E = E^0 + \frac{RT}{nF} \ln a_{u^{n+}} \rightarrow \text{Nernst equation.}$$

It is used to find out the potential (i.e. emf) of the solution.

Q.17 (A)

Intermediates in biosynthesis of cholesterol are Mevalonic acid and Isopentyl Pyrophosphate.



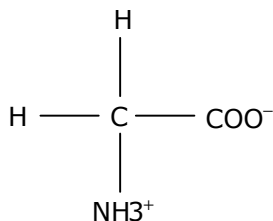
mevalonic acid



cholesterol

Q.18 (A)

Glycine doesn't have a chiral center.



Q.19 (B)

Gram-positive bacteria differ from gram-negative bacteria in the structure of their cell walls. The cell walls of gram-positive bacteria are made up of twenty times as much murein or peptidoglycan. Which contains peptidoglycan, teichoic acid, polysaccharides, and other proteins which are absent in gram native bacteria.

Q.20 (C)

CYP3A4 inhibitors: May increase the levels/effects of digitoxin. Example inhibitors include azole antifungals, ciprofloxacin, clarithromycin, diclofenac, doxycycline, erythromycin, imatinib, isoniazid, nefazodone, nicardipine, propofol, protease inhibitors, **quinidine**, and verapamil.

Q.22 (B)

Klunge's test is for the identification of Isobarbaloin (cupraloin test)

⇒ To very dil. aq. soln. of aloes. A drop of saturated copper sulphate solution is added followed by little amount of sodium chloride and excess of 90% alcohol.

Q.24 (D)

Only two NMDA receptor antagonists Ketamine (anaesthesia and analgesia) and memantine (Alzheimer's disease)

Q.27 (C)

2 gms of drug in 98 gms of ethanol ----- 2% w/w solution

---- gms of drug in 240×0.816 gms of ethanol ----- 2% w/w solution

$$= \quad 2 \times 240 \times 0.816 / 98 = 4.00 \text{ gms of drug}$$

Q.32 (B)

In biochemistry, **quaternary structure** is the arrangement of multiple folded protein molecules in a multi-subunit complex.

Q.34 (C)

Phase I trials are the first stage of testing in human subjects. Normally, a small (20-80) group of healthy volunteers will be selected

Q.35 (B)

The cause of the reaction happens due to the inhibition by an aspirin tablet of the enzyme known as cyclooxygenase enzyme which is responsible for formation of important biological mediators called prostanoids (including prostaglandins, **prostacyclin** and thromboxane).

Q.38 (A)

Levofloxacin – comes under fluoroquinolone. L.Flox inhibits Topoisomerase II (bacterial DNA Gyrase), the enzyme that produces a -ve supercoil in DNA and thus permits transcription or replication.