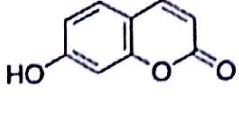
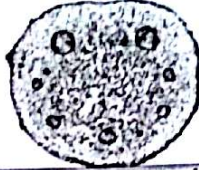
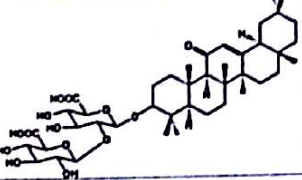
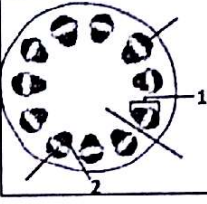
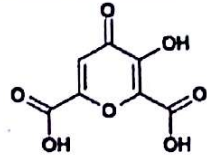
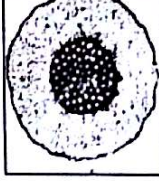

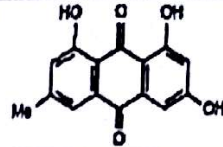
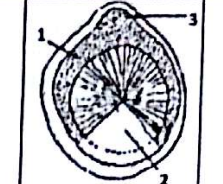
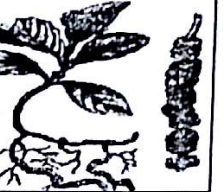

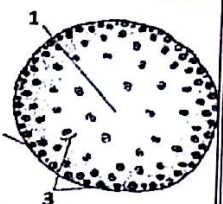

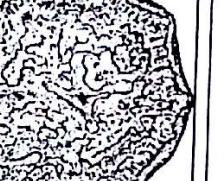

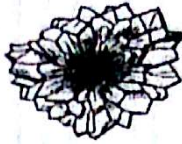
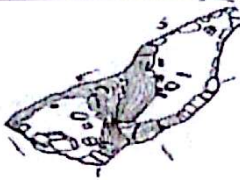
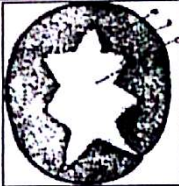
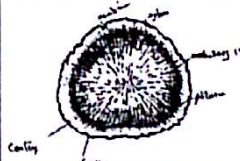
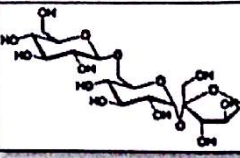
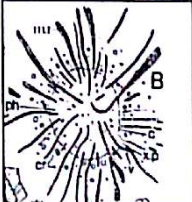
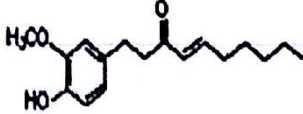


Part II Unorganized & Subterranean Drugs (50 points x 1.5= 75 marks)

Please select the correct answer (only one answer) from the following questions and mark your answer in the Answer Table

<p>1-Which of the following is true about this compound: a-is formed after boiling of glycyrrhizin with HCl b-is formed after boiling of asafoetida with HCl c- is formed after boiling of galbanum with HCl d-is formed after boiling of agar with HCl</p>	
<p>2-This transverse section shows: a-amphivasal vascular bundles b-meristeles which are of primitive vascular system c-dictyostele of 7-9 meristeles d-both b & c</p>	
<p>3-Regarding this compound: a-it is a steroidal saponin contains glucose sugar unit b-the calcium salt of this compound has anti-inflammatory effect c-it is found in drug used as vermifuge d-it is a triterpene saponin with bitter taste</p>	
<p>4-This figure is transverse section of : a-monocot root with number 1 refers to amphivasal vascular bundle b-dicot root with number 1 refers to collateral vascular bundle c- dicot rhizomes with number 1 refers to collateral vascular bundle d- monocot rhizomes with number 1 refers to collateral vascular bundle</p>	
<p>5-This compound is: a-Umbellic acid and it is the marker of Papaver latex b-Meconic acid and it is the marker of colophony resin c- Meconic acid and it is the marker of Papaver latex d-glucouronic acid as a part of glycyrrhizic acid</p>	
<p>6-This T.S. is characterized with: a- small xylem with large phelloderm b-large pith with small xylem c-large xylem with small cortex d-large phloem and xylem</p>	
<p>7-This root contains a-gentiopictin b-senegin which contains chlorine atom c-columbamine d-all of the above</p>	

<p>8-Drug contains this compound and other related compounds: a-is used as expectorant b-is used as purgative c-bitter stomachic & suspending agent in large dose d-shows tertiary cambia as abnormal structures</p>	
<p>9-Regarding the abnormal growth of secondary phloem a-is found in calumba root b- number 2 refers to it c-in this figure it is number 1 d- in this figure it is number 3</p>	
<p>10-This type of ipecacuanha with easy separation of bark from wood could be distinguished from the other type by: a-It has starch granules of bigger size b-It has starch granules of smaller size c- It has calcium oxalate crystals of smaller size d- It has calcium oxalate crystals of bigger size</p>	
<p>11-This T.S. a-is for <i>Jateorhiza palmata</i> b-is for <i>Podophyllum hexandrum</i> c-is for <i>Podophyllum peltatum</i> d-is for drug contains alkaloids</p>	
<p>12-In this T.S. of monocots rhizomes numbers refer to: a-(1) for ground tissue, 2 for epidermal cells & 3 for vascular bundle b-(1) for ground tissue, 2 for piliferous layer & 3 for vascular bundle c-(1) for ground tissue, 2 for epidermal cells & 3 for cambium d-(1) for ground tissue, 2 for metaderm cells & 3 for phloem fibers</p>	
<p>13-This figure is for: a-part of a ramentum in powder of podophyllum b-part of crystal sheeth in powder of liquorice c-part of a ramentum of filix mas powder d-part of scale leaf of rhubarb</p>	
<p>14-This T. S. of root contains: a-emetine which is a type of isoquinoline alkaloids b-scammnonin which is insoluble in ether c-glycosidal resin which has hydragogue effect d-alpha and beta peltatin</p>	

<p>15-The large form and numerous presence of this element are: a-the reason for the fibrous fracture of senega roots b-the reason for the granular fracture of liquorice roots c-the reason for the fibrous fracture of ginger rhizome d-the reason for the fibrous fracture of liquorice roots</p>	
<p>16-This element could be found in: a-<i>Rheum palmatum</i> which causes the gritty taste of its powder b-only in <i>Rheum officinale</i> c-Filix-mas and arranged in groups d-none of the above</p>	
<p>17-This type of sclereids: a-are found in <i>Polygala senega</i> as powder key element b-contain prisms of calcium oxalate c-their color change by addition of KOH d-are found in all rhizomes</p>	
<p>18-This transverse section of root: a-with normal cork layer b-found in dandelion plant c-with metaderm which is the outermost layer of aconite roots d-both a & c</p>	
<p>19-This root (in the figure) and Gentian are medicinally used as: a-bitter tonic & stomachic b-expectorant c-both a & d d-to stimulate digestive secretions</p>	
<p>20-This compound is hydrolyzed by acid to give: a-two molecules of glucose and one molecule of fructose b-two molecules of glucouronic acids and one molecule of fructose c-three molecules of glucose d-three molecules of fructose</p>	
<p>21-This picture refers to: a-abnormal pith in aconite root b-abnormal keel in senega root c-abnormal vascular bundle in <i>Rheum palmatum</i> d- abnormal vascular bundle in <i>Ipomoea orizabensis</i></p>	
<p>22-This compound is: a-gingerol which has antitumor effect b-senegin which is found in fresh ginger c- shagaol which is found in dried ginger d-teniposide which has cytotoxic effect</p>	

<p>23-The juice obtained from <i>Aloe</i> species: a-is found in aloe root with aloetic juice in pericyclic cells b-occurs in aloe leaf with aloetic juice in epidermal cells c-could be found also in rhubarb with aloetic juice in parenchymatous cells d-none of the above</p>
<p>24-Regarding the anthraquinones compounds: a-borax test is used to detect the oxidized form (anthraquinone form) of these compounds b-borax test could be used to detect the aloe-emodin anthranol c-the dried juice of <i>Aloe</i> contains barbaloin & polygalitol d-none of the above</p>
<p>25-To distinguish between Vera Cruz jalap and Orizaba jalap powder: a- They have different phloem fiber shape b-They give different color with I₂ reagent c-Starch granules have different size in their powder d- They give different fluorescent color under UV</p>
<p>26-Odor of methyl salicylate is characteristic of: a-<i>Polygala senega</i> b-<i>Cephaelis acuminata</i> c-<i>Curcuma domestica</i> d-<i>Aconitum napellus</i></p>
<p>27-Isoquinoline alkaloids are found in roots of a-both calumba & senega b-both calumba & ipecacuanha c-both calumba & aconite d-both ipecacuanha and veratrum</p>
<p>28-The following about aldobionic acid is <u>true except</u>: a-Is a constituent of arabic acid in gum Arabic b-Is composed of glucouronic acid and galactose c-Gum arabic also contains oxidase enzyme d-Is composed of tragacanthin & bassorin</p>
<p>29-All of the following is <u>true except</u>: a-Gum tragacanth with benzidine & H₂O₂ gives blue color b-Gum tragacanth swells in water to form gelatinous mass c-Gum arabic is completely dissolve in water to form a viscous liquid d-Gum tragacanth gives blue color with I₂ solution</p>
<p>30-Ginger & galangal: a-both drugs contain volatile oil and a lot of tannins b-they contain pungent principles c-belong to family Plygonaceae d-both b & c</p>

31-Rootstalks of *Polygala senega*:

- a-Contain pith in the middle of the transverse section
- b-Senega drug should not contain these rootstalks
- c-Contain unicellular & blunt trichome
- d-Both a & c

32-Which of the following is false:

- a-Gelatin is used in glycerin suppositories & for bacterial growth media
- b-Solution of gelatin gives yellow precipitate with picric acid
- c-Agar-agar is obtained from boiling *Gelidium* species in pure alcohol
- d-Catechu-tannic acid is the main constituent of catechu extract

33-uronic acid is :

- a-found as a part of glycyrrhetic acid structure
- b-found as a part of arabic acid structure
- c-produced after hydrolysis of agar with acid
- d- produced after hydrolysis of catechu extract

34-Hydrastis rhizomes:

- a- could be used as carminative stimulant
- b-contain hydrastine & palmatine alkaloids
- c-belong to family Zingiberaceae
- d- are used to treat genitourinary tract inflammation

35-Colchicine:

- a-is a type of flavonoids with anti-tumor effect
- b-it treats gout due to polyploidy
- c-is used with columbamine as bitter stomachic
- d-causes polyploidy in *Artemisia annua* to increase artemisinin

36-The transverse section of subterranean drugs:

- a-shows radial vascular bundles in roots with exarch xylem
- b-of dicot rhizomes shows no pith
- c-includes vasicentric vascular bundles in rhizomes
- d-with centrarch xylem and secondary thickening of monocot roots

37-Polyploidy is induced in plants to:

- a-increase the sugar content
- b-to reduce toxic components
- c-to increase active constituents which increase pests resistance
- d-to treat rheumatism

38-Opium latex:

- a-is found in laticiferous vessels in *Papaver* petals
- b-is obtained from fully grown unripe follicles
- c-contains morphine meconate
- d-all of the above

<p>39-Regarding resin or resin combinations: a-it could be secreted from trichome as in clove b-it could be accompanied with gum as in guaiacum c-it could have antiseptic effect as in myrrh d-it is obtained as normal secretion in case of benzoin</p>
<p>40-Resin of podophyllum: a-is a glycosidal resin which contains podophyllotoxin b-contains alpha guaiaconic acid which detect the presence of oxidase enzyme c-it could be obtained by heating d-all of the above</p>
<p>41-The following drugs has bitter stomachic effect: a-rhubarb & gentian b-quassia & calumba c-gentian & quassia d-all of the above</p>
<p>42-Which of the following has antiseptic effect: a-cobaipa & guaiacum b-myrrh & benzoin c-asafoetida & canada balsam d-turmeric & myrrh</p>
<p>43-Regarding ginger: a-it has septate fibers in the fibrovascular bundles b-it has a characteristic type of calcium oxalate c-it is used as expectorant in chronic cough d-its pungency is due to galangol</p>
<p>44-Drying of gentian: a-is preferable as it changes its color to yellow brown color b-causes hydrolysis of bitter principles & sugars so taste is improved c-changes the odor to vanillin like odor d-should not be done at all</p>
<p>45-Benzaldehyde odor is formed: a-by adding $KMnO_4$ to benzoin Sumatra, balsam tolu & peru b-by adding $KMnO_4$ to benzoin Siam c-due to presence of high content of benzoic acid d-could be used to distinguish between balsam tolu & peru</p>
<p>46-Which of the following has expectorant effect: a-senega & calumba b-liquorice & copaiba balsam c-hydrastis & turmeric d-shagaol & galangol</p>
<p>47-Which of the following contains tannins: a-rhubarb & catechu extract b-aconite & calumba c-catechu extract & aloe d-senega roots</p>
<p>48-Rhapontic rhubarb powder could be distinguished from Chinese Rhubarb by: a-by adding copper acetate solution to its alcoholic extract b-by adding calcium chloride solution c-by size of starch granules d-UV examination to show blue inflorescence</p>

49-Oleo-resin of ginger:

a-contains gingerol whose pungency is destroyed with $KMnO_4$

b-presents with compound starch granules

c-resin is normally secreted in the resin ducts

d-contains zingiberene in its volatile oil part

50-Papaverine:

a-is an alkaloid found in aconite roots

b-has smooth muscle relaxant effect

c-is a triterpene saponin found in *Papaver somniferum*

d-it has strong narcotic effect as morphine

The Answer Table

	a	b	c	d		a	b	c	d
1					26				
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