

## Bihar Public Service Commission

Drug Inspector Written (Objective) Competitive Examination (Advt.No. 09/2022)

**(Examination Date :08.07.2023)**

### **PROVISIONAL ANSWER KEY :Pharmacognosy (Paper-2, Unit II)**

आयोग द्वारा उपलब्ध कराये गये उत्तर पूर्णतः औपबधिक (Provisional) हैं। उपर्युक्त निर्धारित तिथि तक आपत्तिकर्ताओं से प्राप्त आपत्ति की गहन समीक्षा विषय विशेषज्ञों की समिति द्वारा की जायेगी और गहन समीक्षोपरान्त सभी प्रश्नों का अन्तिम आदर्श उत्तर तैयार किया जायेगा। विषय विशेषज्ञों की समिति द्वारा तैयार किये गये उक्त अन्तिम आदर्श उत्तर का आयोग द्वारा अनुमोदनोपरान्त उसके आधार पर ओ.एम.आर. उत्तर पत्रक (OMR Answer Sheet) का मूल्यांकन किया जायेगा।

Series-A		Series-B		Series-C		Series-D		Remarks
Question No.	Answer	Question No.	Answer	Question No.	Answer	Question No.	Answer	
1	A	17	B	26	C	43	D	RauwolfiabelongstoApocynaceafamily. Trease,G.E.,&Evans,W.C.L(1976).Pharmacognosy,11thedition,1976,p.599
2	D	18	A	27	B	44	C	ThegenuinevarietyofRauwolfiais <i>Rauwolfiaserpentina</i> .Allothervarietiesareeither substituteoradulterant. Wallis,T.E.,1967.TextBookofPharmacognosy5thEdition,p416
3	D	19	A	28	B	45	C	Loganinisnotanalkaloidthusisnotanindolealkaloid. Trease,G.E.,&Evans,W.C.L(1976).Pharmacognosy,11thedition,1976P.589
4	A	20	B	29	C	46	D	RootsofIpecacplantisusedasadrug. Wallis,T.E.,1967.TextBookofPharmacognosy5thEdition,p401
5	A	21	B	30	C	47	D	Emetineisusedinthetreatmentofamoebicdysentery. Wallis,T.E.,1967.TextBookofPharmacognosy5thEdition,p405andPharmacognosy11 <sup>th</sup> edGeorgeEdwardTreaseandWilliamCharlesEvans),1976P.583
6	D	22	D	31	D	48	D	AllthementionedplantscanbeusedasasubstituentofIpecac. Wallis,T.E.,1967.TextBookofPharmacognosy5thEdition,p405
7	A	23	B	32	C	49	D	ThemethodofpreparationofBelladonna TinctureispercolationHomoeopathicPharmacopoeiaofIndia(HPI)-Volume-I.
8	B	24	C	33	D	50	A	'Deadlynightshade'isanameusedforBelladonna. Wallis,T.E.,1967.TextBookofPharmacognosy5thEdition,p320
9	A	25	B	34	C	1	D	Atropinebelongstotheclasseoftropanealkaloid. (Pharmacognosy11 <sup>th</sup> edGeorgeEdwardTreaseandWilliamCharlesEvans)1976P.534  Trease,G.E.,&Evans,W.C.L(1976).Pharmacognosy,11thedition,P.534
10	C	26	D	35	A	2	B	Vitali-MorintestisusedforthedetectionoftheAtropinealkaloid. Trease,G.E.,&Evans,W.C.L(1976).Ph

Series-A		Series-B		Series-C		Series-D		Remarks
Question No.	Answer	Question No.	Answer	Question No.	Answer	Question No.	Answer	
								armacognosy, 11th edition, P.213
11	C	27	D	36	A	3	B	Cinchona is used in the treatment of malaria. Trease, G.E., & Evans, W.C.L (1976). Pharmacognosy, 11th edition, 1976 P.607
12	C	28	D	37	A	4	B	Jesuit's bark is a synonym of Cinchonabark. Wallis, T.E., 1967. Text Book of Pharmacognosy 5th Edition, p92
13	B	29	C	38	D	5	A	Quinine is the chemical mirror image of quinidine, similar to the differences of the right from the left hand-identical but can't overlap, a structural characteristic in chemistry known as chirality. This results in quinidine and quinine being stereoisomers of each other. (Patent No. EP1240167A1, European Patent Office) AND (JHepatol, 1998 Feb; 28(2):240-9.) doi: 10.1016/0168-8278(88)80011-4.
14	D	30	A	39	B	6	C	Cinchona bark, when moistened with sulphuric acid and observed under ultraviolet light, gives blue-colored fluorescence. Herbal Drug Technology By S.S. Agrawal and M. Paridhavi University Press 2007 p 379.
15	D	31	A	40	B	7	C	Among the given options, <i>Remijia purdiana</i> does not contain quinine. Trease, G.E., & Evans, W.C.L (1976). Pharmacognosy, 11th edition, 1976, P.608
16	B	32	C	41	D	8	A	<i>Cinnamomum latian</i> variety of cinnamon have a flavor like clove. pharmacy180.com <a href="https://www.pharmacy180.com/cinnamon-231">https://www.pharmacy180.com/cinnamon-231</a> .
17	D	33	D	42	D	9	D	Tulsi, Cinnamon and Clove, all the three herbs contain eugenol. Trease, G.E., & Evans, W.C.L (1976). Pharmacognosy, 11th edition, P.446, 440
18	A	34	B	43	C	10	D	Cinnamon belongs to Lauraceae Family. Trease, G.E., & Evans, W.C.L (1976). Pharmacognosy, 11th edition, P.435
19	B	35	C	44	D	11	A	Though foxglove ( <i>Digitalis purpurea</i> ) has been used in folk medicine for centuries, Withering drew upon 156 of his own cases to objectively demonstrate its efficacy in treating <b>dropsy</b> , the edematous bodily swelling that typically accompanied heart failure. ( <a href="https://www.britannica.com/biography/William-Withering">https://www.britannica.com/biography/William-Withering</a> )
20	C	36	D	45	A	12	B	Digitalis belongs to the class of cardiac glycoside. Trease, G.E., & Evans, W.C.L (1976). Pharmacognosy, 11th edition, P.501
21	C	37	D	46	A	13	B	Murexide test is used to identify caffeine and other purine derivatives. Thus, this test cannot be employed to test Digitalis which mainly contains cardiac glycosides. Agarwal O.P. <i>Advances Practical Organic Chemistry</i> (26th ed.). Meerut, India: GOEL Publishing House, p.53.)

Series-A		Series-B		Series-C		Series-D		Remarks
Question No.	Answer	Question No.	Answer	Question No.	Answer	Question No.	Answer	
22	A	38	B	47	C	14	D	Digitoxin+GlucoseisformedonEnzymatic hydrolysis of Purpure glycoside A. Trease, G.E., & Evans, W.C.L (1976). Pharmacognosy, 11 <sup>th</sup> edition, P.500
23	A	39	B	48	C	15	D	Senna contains O-Glycoside in which sugar molecule is combined with phenolic OH group of aglycon. Trease, G.E., & Evans, W.C.L (1976). Pharmacognosy, 11 <sup>th</sup> edition, (Pharmacognosy 1 <sup>st</sup> ed George Edward Trease and William Charles Evans) 1976, P.376
24	A	40	B	49	C	16	D	Senna gives a positive Borntrager test. The quantity of aloin is so less, therefore, a modified borntrager test is used in Aloe. Trease, G.E., & Evans, W.C.L (1976). Pharmacognosy, 11 <sup>th</sup> edition, P.375. (p398)
25	D	41	A	50	B	17	C	Cassia maramitica is known as wild senna. " <i>Sennamarilandica(L.)Link</i> ". <i>Plants of the World Online. Royal Botanic Gardens, Kew.</i>
26	D	42	A	1	B	18	C	Senna is used as a purgative due to the presence of anthraquinone moiety. Mukherjee, P.K., Venkatesh, M., & Gantait, A. (2010). 3.14— Ayurveda in modern medicine: Development and modification of bioactivity. In H. W. (Ben) Liu & L. Mander (Eds.), <i>Comprehensive natural products II</i> (pp.479–507). Elsevier. <a href="https://doi.org/10.1016/B978-008045382-8.00655-9">https://doi.org/10.1016/B978-008045382-8.00655-9</a>
27	C	43	D	2	A	19	B	Amongst all the choices the leaf of Digitalis is an example of organised drug. All other are exudates derived from plant parts. Reference: Shah, B.N., 2009. <i>Textbook of pharmacognosy and phytochemistry</i> . Elsevier India. Page number-24.
28	B	44	C	3	D	20	A	Zanzibar aloin is known as monkey-skin aloin. Wallis, T.E., 1967. <i>Text Book of Pharmacognosy 5th Edition</i> , p452.
29	D	45	D	4	D	21	D	Both Curacao aloin and Cape aloin are positive to Cupraloin test. Trease, G.E., & Evans, W.C.L (1976). Pharmacognosy, 11 <sup>th</sup> edition, P.397; Herbal Drug Technology By S.S Agrawal and M. Paridhavi University Press 2007 p 224. Negative test is given by zangibar and socotrine aloin.
30	B	46	C	5	D	22	A	Leaves of the aloin are used as a source of aloin. Trease, G.E., & Evans, W.C.L (1976). Pharmacognosy, 11 <sup>th</sup> edition, P.394 and 398.
31	C	47	D	6	A	23	B	Strychnine is isolated from <i>Nuxvomica</i> . Trease, G.E., & Evans, W.C.L (1976). Pharmacognosy, 11 <sup>th</sup> edition, P.597.

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Question No.	Answer	Question No.	Answer	Question No.	Answer	Question No.	Answer	
32	A	48	B	7	C	24	D	Nux-vomica is known as "Crow Fig". Wallis, T.E., 1967. Text Book of Pharmacognosy 5th Edition, p205.
33	C	49	D	8	A	25	B	Nux-vomica is used as a bitter tonic. Trease, G.E., & Evans, W.C.L (1976). Pharmacognosy, 11th edition, P.599
34	A	50	B	9	A	26	B	Strychnine gives violet colour with potassium dichromate and concentrated sulphuric acid. Herbal Drug Technology, By S.S. Agrawal M. Paridhavi University Press 2007, p396
35	A	1	B	10	C	27	D	Opium belongs to Papaveraceae family. Trease, G.E., & Evans, W.C.L (1976). Pharmacognosy, 11th edition, P.569
36	B	2	C	11	D	28	A	Meconic acid is found in Opium. Trease, G.E., & Evans, W.C.L (1976). Pharmacognosy, 11th edition, P.575
37	B	3	C	12	D	29	A	Among the given options Morphine is an example of narcotic analgesic. (Pharmacognosy 11 <sup>th</sup> ed George Edward Trease and William Charles Evans) 1976 P.575
38	C	4	D	13	A	30	B	Opium is cultivated under the license from the Government. Textbook of Pharmacognosy by T.E Wallis 5 <sup>th</sup> edn. p446
39	B	5	C	14	D	31	A	Kurchi is an example of steroidal alkaloid. Trease, G.E., & Evans, W.C.L (1976). Pharmacognosy, 11th edition, P.620
40	B	6	C	15	D	32	A	Connesine is used to cure amoebic dysentery and diarrhoea. Trease, G.E., & Evans, W.C.L (1976). Pharmacognosy, 11th edition, P.620 Pharmacognosy by J.S. Qadry 15 <sup>th</sup> ed p391
41	C	7	D	16	A	33	B	Brahmi is used as a nervine tonic. Pharmacognosy by J.S. Qadry 15 <sup>th</sup> ed p268
42	A	8	B	17	C	34	D	Asiaticoside is triterpenoid saponin glycosides. Pharmacognosy by J.S. Qadry 15 <sup>th</sup> ed p268
43	Deleted	9	Deleted	18	Deleted	35	Deleted	Malic acid is not present in all the given four options. Malic acid is a saturated dicarboxylic acid whereas maleic acid is an unsaturated dicarboxylic acid. Although Maleic acid is present in Tulsi intraces. (Reference: Shah, B.N., 2009. Textbook of pharmacognosy and phytochemistry. Elsevier India. Page no. 306)
44	A	10	B	19	C	36	D	Tulsi is an immunomodulator herb among the given options of herbs. Kumar, D., Arya, V., Kaur, R., Bhat, Z.A., Gupta, V.K. and Kumar, V., 2012. A review of immunomodulators in the Indian traditional health care system. <i>Journal of Microbiology, Immunology and Infection</i> , 45(3), pp. 165-184.

Series-A		Series-B		Series-C		Series-D		Remarks
Question No.	Answer	Question No.	Answer	Question No.	Answer	Question No.	Answer	
45	B	11	C	20	D	37	A	The glycoside present in Aloe is C-Glycoside. Trease, G.E., & Evans, W.C.L (1976). Pharmacognosy, 11th edition, P.398
46	A	12	B	21	C	38	D	Bael contains marmelosin which are furanocoumarins Pharmacognosy by J.S. Qadry 15 <sup>th</sup> ed p79
47	A	13	B	22	C	39	D	The Bael roots are one of the constituents of Ayurvedic preparation called Dasmula. Pharmacognosy by J.S. Qadry 15 <sup>th</sup> ed p79
48	C	14	D	23	A	40	B	Ephedra is an example of alkaloid amine. Herbal Drug Technology by S.S. Agrawal and M. Paridhavi University Press 2007 p 399
49	B	15	C	24	D	41	A	Ephedra is a respiratory stimulant. Trease, G.E., & Evans, W.C.L (1976). Pharmacognosy, 11th edition, p.567
50	A	16	B	25	C	42	D	Ipecacuanha induces vomiting. Trease, G.E., & Evans, W.C.L (1976). Pharmacognosy, 11th edition, p.583