(3 Hours) **Total Marks: 75**

Q. 1Attempt all multiple-choice questions (MCQ) **20M**

Sr No	Questions		Options
1	As per WHO guidelines Category 2 herbal medicines are _____	a	Safe under specific conditions of use
		b	Herbal medicines of uncertain safety
		c	Safety established by use over long time
		d	Not safe at all
2	Fluoride ion content in Non-fluoridate toothpaste should be maximum _____ parts per million as per BIS	a	50
		b	200
		c	800
		d	500
3	Chemical method used for analysis of raw materials in cosmetics is _____	a	Saponification Value
		b	Relative density
		c	Sieve Analysis
		d	pH
4	Stability testing of herbal drugs and preparations is carried out at ----------	a	40°C/75 per cent RH
		b	30°C/65 per cent RH
		c	25°C/60 per cent RH
		d	45°C/85 per cent RH
5	1gm of crude drug was heated at 110 C for 2 Hours and the weight after heating was 0.82 gm. The moisture content of crude drug is ____%w/w	a	82
		b	18
		c	0.18
		d	0.82
6	RAPD in DNA fingerprinting refers to ---	a	Randomly Amplified Polymorphic DNA
		b	Randomly Associated Polymorphic DNA
		c	Regularly Amplified Polymorphic DNA
		d	Randomly Amplified Polymeric DNA
7	Softening point of lipstick should be minimum _____ as per BIS standards	a	65^0C
		b	75^0C
		c	85^0C
		d	55^0C

8	which of the following modern analytical instruments is used for Adulterant Screening	a	Flame photometer
		b	UPLC-TOFMS
		c	Colorimeter
		d	AAS
9	Iodine value of fatty material used in cosmetics indicate	a	Molecular weight
		b	Unsaturation
		c	Free acid content
		d	Hydroxyl group content
10	Chemical method used for analysis of raw materials in cosmetics is _____	a	Saponification Value
		b	Relative density
		c	Sieve Analysis
		d	pH
11	Herbal Toxicity refers to	a	the relative ability of a substance to cause adverse effects in living organisms
		b	the amount of active constituents present in the drug
		c	the amount of substance which drug yields to the solvent
		d	The amount of starch present in the drug
12	The temperature at which the product starts oozing out the oil and becomes flattened out is - ----------	a	breaking load
		b	melting point
		c	drooping point
		d	breaking point
13	In India, most of the traditional herbs are available as	a	Dispensing medicine
		b	OTC medicines
		c	Prescription medicine
		d	Schedule T drugs

14	Heavy metals content in Skin cream should be maximum _____ parts per million as per BIS	a b c d	500 200 1000 20
15	Authentication of herbal crude drug by size & appearance is called	a b c d	Drug Fingerprinting Microscopic evaluation Macroscopic evaluation Bio-prospecting
16	Physical method used for analysis of raw materials in cosmetics is _____	a b c d	Ash value Iodine value Microscopy Animal studies
17	Content of lead in crude drug should not be more than ---- ppm_____	a b c d	2 8 5 10
18	Majority of adverse events related to the use of herbal products are due to	a b c d	unskilled labour used in collection poor quality control tests done on herbals High artificial drying of drugs bad storage conditions
19	Safety assessment of herbal drug is carried out by	a b c d	Toxicological studies Physicochemical evaluation ash values and extractive values Authentication Organoleptic evaluation
20	Volatile oil content in crude drug is best determined by _____	a b c d	Counter current Apparatus Soxhlet Apparatus Clavenger Apparatus titrimetry

Q2. Answer any TWO of the following **20M**

i) Briefly explain the Indian standard specification laid down for testing of Skin care & personal hygiene products

ii) Discuss the spontaneous reporting schemes & challenges for the safety monitoring of herbal medicine.

iii) Explain different aspects of WHO and AYUSH guidelines for Herbal drug standardization

Q3. Answer any SEVEN of the following **35M**

i) Justify with suitable example how is DNA fingerprinting technique useful in quality control of crude drugs.

ii) Define Herbal drug-drug interaction with suitable examples. Discuss Challenges in monitoring the safety of herbal medicine.

iii) Justify the importance of determination of viscosity & fineness of powders in evaluation of cosmetic products.

iv) Enlist different methods of Analysis for raw material used in cosmetic manufacture as per BIS.

v) Describe in detail about stability testing protocol and techniques applicable for natural product

vi) Discuss regulatory guidelines for setting up Herbal drug Industry.

vii) Explain different parts of herbal drug monograph of USP

viii) Explain determination of ash value & heavy metals for evaluation of cosmetic products.

ix) Discuss Indian and International patent law for herbal drug & mention their protocol.