X

Scienktie Dis

	0	A	1
F	3	A	Z

Booklet Series

	Δ	
•	, 77	

Register		 	
Number			

2010 FORENSIC SCIENCE

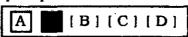
Time Allowed: 3 Hours]

Maximum Marks: 300

Read the following instructions carefully before you begin to answer the questions.

IMPORTANT INSTRUCTIONS

- This Booklet has a cover (this page) which should not be opened till the invigilator gives signal to
 open it at the commencement of the examination. As soon as the signal is received you should tear
 the right side of the booklet cover carefully to open the booklet. Then proceed to answer the questions.
- 2. This Question Booklet contains 200 questions.
- 3. Answer all questions.
- 4. All questions carry equal marks.
- 5. The Test Booklet is printed in four series e.g. A B C or D (See Top left side of this page). The candidate has to indicate in the space provided in the Answer Sheet the series of the booklet. For example, if the candidate gets A series booklet, he/she has to indicate in the side 2 of the Answer Sheet with Blue or Black Ink Ball point pen as follows:



- 6. You must write your Register Number in the space provided on the top right side of this page. Do not write anything else on the Question Booklet.
- 7. An Answer Sheet will be supplied to you separately by the Invigilator to mark the answers. You must write your Name. Register No. and other particulars on side 1 of the Answer Sheet provided, failing which your Answer Sheet will not be evaluated.
- 8. You will also encode your Register Number, Subject Code etc., with Blue or Black ink Ball point pen in the space provided on the side 2 of the Answer Sheet. If you do not encode properly or fail to encode the above information, your Answer Sheet will not be evaluated.
- 9. Each question comprises four responses (A), (B), (C) and (D). You are to select ONLY ONE correct response and mark in your Answer Sheet. In case you feel that there are more than one correct response, mark the response which you consider the best. In any case, choose ONLY ONE response for each question. Your total marks will depend on the number of correct responses marked by you in the Answer Sheet.
- 10. In the Answer Sheet there are four brackets [A] [B] [C] and [D] against each question. To answer the questions you are to mark with Ball point pen ONLY ONE bracket of your choice for each question. Select one response for each question in the Question Booklet and mark in the Answer Sheet. If you mark more than one answer for one question, the answer will be treated as wrong. e.g. If for any item, (B) is the correct answer, you have to mark as follows:

[A] = [C][D]

- 11. You should not remove or tear off any sheet from this Question Booklet. You are not allowed to take this Question Booklet and the Answer Sheet out of the Examination Hall during the examination. After the examination is concluded, you must hand over your Answer Sheet to the Invigilator. You are allowed to take the Question Booklet with you only after the Examination is over.
- 12. Failure to comply with any of the above instructions will render you liable to such action or penalty as the Commission may decide at their discretion.
- 13. Do not tick-mark or mark the answers in the Question Booklet.

1.	The chemically erased writings can be deciphered by using						
	A)	hand	magnii	ler		B)	stereoscopic microscope
i	C)	electr	ostatic	detect	ion apparati	ıs D)	video spectral comparator.
2.	Mato	h Lis	t I corr	ectly v	vith List II a	and select	your answer using the codes given
	belo	w the	lists :	v	,		*
	•		List	•			List II
		a)	Norma	l phas	e	1.	Hydrophobic small pore packing
		b)	Revers	e pha	se	2.	Silica packing
	:	c)	lon ex	change	•	. 3.	C ₁₈ packing
•		d)	Small	molec	ules	4.	Anion-cation exchange material.
	Cod	es :					
		, a	b	c	d		
	A)	2	3	4	ì	•	•
	B)	1	2	3	4	-	
	C)	4	3	2	1		
	D)	3	2	1	4.		·
3.	Any	objec	t that	conta	ins handwr	iting or	typewriting and whose source or
	auth	nentici	ty is in	doubt	is referred t	o as	•
	A)	quest	tioned (iocum	ents	B)	disputed documents
	C)	anon	ymous	docun	nents	D)	all of these.
F	202	x 14	07			14001	[Turn over

4.	If tv	vo signatures of a person are exactly	y alike	in dimensions then at least one of
	ther	n is forged. It is referred to as		
	A)	simulated forgery	B)	imitated forgery
	C)	freehand forgery	D)	traced forgery.
5.	The	drug used as antidote for opioid dru	ıg is	
	A)	Pethidine	,B)	Mandrax
	C)	Naloxone	D)	Morphine.
6.	The	flavour of beer is due to		
	A)	Hops resin	B)	Yeast
	C)	Malt extract	D)	Ethanol.
7.	Duc	quenois-Levin test is performed to id	entify	
	A)	opium	B) ·	cannabis
	, C)	organophosphorous pesticide	D)	oleander.
8.	То	determine the level of carbon m	onoxid	le in blood, the concentration of
	*****	is studied.		
	A)	Haemoglobin	B)	WBC
	C)	Meth-Haemoglobin	D)	Carboxy Haemoglobin.
9.	Mol	asses differ from other feed stock	s sucl	n as corn, agave and potatoes for
	alco	phol production in		•
	A)	being present as starch	B)	being present as alcohol
	C)	being present as sugars	D)	being present as cellulose.
w [14	07	· ·		

10.	****	is the bacteria which co	onverts F	Ethanol to Ethanoic acid.
	A)	Yeast	B)	Acetobacter
	C)	Amylase	D)	Zymomonas.
11.	Lys	ergic acid diethyl amide is synthe	sized fro	m
,	A)	opium alkaloids	B)	Rye ergot
	C)	cannabinol	D)	phenols.
12.	The	e vomitus of highly unstable aconi	te is pre	served in
	A)	acetic acid and rectified spirit (1:2)	
·	B)	acetic acid and formalin ($1:2$)		·
	C)	acetic acid and ether (1:2)		,
	D)	formic acid and rectified spirit (1:2).	
13.	Str	ychnine poisoning resembles		
	A)	tetanus	B)	cocainism
	C)	datura poisioning	D)	organophosphorus poisoning.
14.	Coc	eaine is obtained from		
	(A)	erythroxylum coca	B)	opium
	C)	cannabts	D)	none of these.
15.	014040	is a strong inhibitor of a	cetylcho	line esterase enzymes.
	A)	Organochloride pesticide	B)	Herbicides
	C)	Organophosphorous pesticide	D)	Fungicides.
x 14	07]		14001	Turn over

16.	The	active principle of Marihuana is		·
	A) .	cannabidiol	B)	tetrahydrocannabinol
	C)	cannabinol	D)	cannabinoid.
17.	Aton	nic absorption spectrometry has go	t a je	t of compressed air, gas & sample
	solu	tion through capillary tubes which i	s intro	oduced in the instrument through
	A)	pump	B)	nebulizer or atomizer
	C)	furnace	D) ̈	sprayer.
18.	The	common source for atomic absorption	on spe	ectrometry is
<u> </u>	A)	bulbs	B)	hollow cathode lamps
	C)	lamps	D)	night bulbs.
19.	Ultra	aviolet radiations can be used for	_	
	A)	checking fake currencies	В)	identifying seminal stains
	C)	sterilization	D) .	all of these.
20.	Visu	alization of gunshot residues patte	ern ex	sploits the fact that these patterns
	cont	ain radio opaque particle such as b	ullet l	ead and uses which of the following
	best	techniques?		
	A)	X-ray radiography	B)	Photography
	C)	Cinematography	D)	Polygraphy.
21.	X-ra	ly fluorescence spectrometry is usef	ul for	
	A)	qualitative and quantitative determ	inatio	on of elements
	B)	analysis of primer residues		
٠	C) ,	shooter identification		•
	D)	all of these.		•

22 .	The	best Institute in India where	neutron activ	vation analysis can be done is				
	A)	Central Forensic Science Lab	ooratory, Cha	ndigarh				
	B)	Bhabha Atomic Research Centre, Trombay.						
	C)	Central Forensic Science Lal	ooratory, Koll	kata				
,	D)	None of these.						
23.	In A	tomic absorption spectroscop	y which of th	e following events occur(s)?				
	A) Evaporation of solvent leaving a solid residue B) Solid dissociates into its atoms in ground state							
	C) ,	Some atoms may be excited	i in the flam	e and attain a condition in which				
		they radiate energy		•				
	D)	All of these.		. *				
24.	Prir	ne factors for determining goo	d colour prin	its are				
	,	I. Contrast						
		II. Colour balance						
		III. Graininess						
	٠	IV. Illumination.						
	Of t	these						
	A)	I alone is correct	В)	I, II & III are correct				
•	C)	I & II are correct	D)	II & IV are correct.				
25.	Wha	at is the colour temperature a	t the higher o	end (10000 K) of the Kelvin scale ?				
•	A)	Red	B)	White				
	C)	Blue	D)	Yellow.				
x 14	07		14001	[Turn over				

26.	A m	ethod to decipher a painted messa	ige in a	case is
	A)	ultraviolet photography	· B),	infrared photography
	C)	ultrafluorescence photography	D)	ultraviolet reflected photograpy.
27.	A sı	uitable method to photograph in d	letecting	g additions and alterations made in
	a fo	rged document is		
	A)	reflected UV photography	B)	fluorescent photography
	C)	infrared photography	D)	none of these.
28.	'Rev	versal processing means		
	A)	negative image is produced instead	ad of po	sitive
•	B)	positive image is produced instea	d of neg	gative image
	C)	no image is produced		
	D)	none of these.		
29.	Non	n-colour sensitized film(s) is/are se	nsitive t	.
	A)	blue-violet regions	B)	ultraviolet regions
	C)	blue regions	D)	all of these.
30.	Wh	ich angle produces the maximum o	effect us	ing a polarizing filter?
	A }	90° .	B)	80°
	C)	35°	D)	10°
31.	Am	ong the following, which lens is us	ed for d	ocument evidence photography?
	A)	Macro lens	B)	Normal lens
	C)	Wide angle lens	D)	None of these.
x 14	407	•	14001	

32.	32. If an object is at a distance of 8 m, and you have a camera with maximum of f-2							
	then what is the maximum guide number which can be used to photograph the							
	obje	ect?						
· :.	(A)	30	B)	300				
, <u>;</u>	C)	176	D)	14.				
33.	The best method to study morphology of hair samples for comparative study is							
	A)	photomicrograph	B)	photomacrograph				
	C)	both (A) & (B) are correct	D)	both (A) & (B) are not correct.				
34.	A s	suitable method of illumination to p	photog	graph the impression made by the				
	imţ	plement in a burglary case is						
	A) '	Direct light illumination	B)	UV light illumination				
	C)	Oblique light illumination	D)	Scattered light illumination.				
35.	Wh	en a bullet penetrates a glass the e	ffect(s) which can be seen predominantly				
	is/are							
	A)	a crater shaped hole		<u>.</u>				
	B)	symmetric radial and concentric cr	acks					
-	C)	the hole is inevitably wider at the e	xit sid	e				
	D)	D) all of these.						
36.	Fra	ctured window glass reveals the info	rmatio	on on				
A) the type of projectile used								
	B)	B) the size of the projectile used						
	C)	the force and direction of the project	ctile u	sed				
	D)	all of these.						
x 14	07	<u> </u>	4001	{ Turn over				

37.		crater snaped note in glass on the s	ide wi	here the projectile has entered is
	A)	wider	B)	narrower
	C)	shallower	D)	no difference.
38.		comparison of glass pieces by 'imm sical property is done with	ersion	method' using refractive index as a
	A)	coconut oil	B)	silicone oil
	C)	sulphuric acid	D)	water and coconut oil.
39 .		smaller lines perpendicular to the glass are called as	rib ma	arks found at the fractured edges of
	A)	Linear marks	B)	Hackle marks
	C)	Griffith marks	D}	Stress marks.
40.	•	ere there have been successive pene etermine the sequence of impact	etratio	ns of glass, it is frequently possible
	A)	by observing the existing fracture	ines a	nd their points of termination
	B)	by observing the shape of the hole	s	
	C)	by observing the size of the holes		
	D)	by studying the rib and hackle m	arks a	at the cross-section of the fractured
41.		en a high-velocity projectile such	as a	bullet, penetrates a glass, it often
	A)	round, crater-shaped hole surrouradial and concentric fractures	inded	by a nearly symmetrical pattern of
	B)	irregular hole surrounded by a concentric fractures	nearly	symmetrical pattern of radial and
	C)	round, crater-shaped hole surrou radial fractures	nded	by a nearly asymmetrical pattern of
	D)	irregular hole devoid of radial or c	oncen	tric fractures.

[Turn over

42. The change in refractive index value for tempered and non-temper			ered and non-tempered glass, upon	
	ann	ealing, is		
	A)	significantly greater	B)	significantly lesser
•	C)	almost nil	D)	none of these.
43.	Lan	ninated glass used as windshields in	auto	mobiles is usually made by
•	A)	sandwiching one layer of plastic	betwee	een two pieces of ordinary window
	B)	sandwiching one layer of paper be	tween	two pieces of ordinary window glass
•	C)	sandwiching a thin layer of ironwindow glass	n mes	sh between two pieces of ordinary
	D)	sandwiching a thin layer of sun resistant glass.	contr	ol film between two pieces of heat
44.	Wh	ich one of the following is useful to	estima	ate the range of fire ?
	A)	Shot patterns	В)	Wad distribution
	C)	Powder patterns	D)	All of these.
45 .	Wh	en a shot is fired from an automatic	pisto	the empty shell
	A)	remains in the chamber	B)	invariably be found at the scene
	C)	rarely found at the scene	D)	will be shattered into pieces.
46.	Wa	ds are used in the cartridge		
	A)	to keep the propellant and shot ch	narge i	n their respective position
	B)	to prevent escape of gases from th	e barr	el
•	C)	to avoid reduction in velocity of pr	ojectil	es
	D)	all of these.		

14001

47 .	The	ingredient in primer is		
	A)	sulphur	B)	carbon
	C)	potassium nitrate	D)	lead azide.
48.	Gyr	atory motion is referred to		
	A)	the spinning motion of the project	ile	
	B)	the velocity of the bullet		
	C)	the speed of ejection of fired cartri	dge ca	sę
	D)	the recoil of the gun		
49.	The	space between barrel and revolving	g cylind	ler in a revolver causes
	A)	leakage of gases and powder resid	ues	
	B)	reducing effectiveness of the fire a	rm	
	C)	depositing residual powder on the	hand	of the shooter
	D)	all of these.		
50.	A m	echanical mixture of potassium nit	rate, cl	narcoal and sulphur is called
	A)	black powder	В).	grey powder
	C)	semi-smokeless powder	D)	smokeless powder.
51.	Pitc	h on angle of twist of a bore is mea	sured l	oy ´
	A)	helixometer	B)	spherometer
	C)	screw gauge	D)	vernier caliper.
52 .	Wh	ich one of the following is not a con	iponen	t of rifled cartridge?
	A)	Primer	B)	Powder charge
(4.7	C)	Bullet	D)	Firing pin.
x 14	1U /		14001	

[Turn over

53.	3. Which of the following includes tyre markings, shoe prints, depressions in so			gs, shoe prints, depressions in soft
	soils	s and all other forms of tracks?		
	A)	Explosions	B)	Impressions
	C)	Both (A) & (B)	D)	None of these.
54.	Loca	ating the physical evidence		
. •	A)	needs same type of search method	s for a	all the cases
	B)	needs trained persons to locate the	mate	rial object
	(C)	needs an inquiring mind and a sea	rchin	g eye
	D)	none of these.		
55.	The	source of physical evidence in crime	e agai	nst property is
	A)	the scene of crime	B)	the suspect
	·C)	the environment	D)	all of these.
56 .	Whi	ich one of the following is the mo	st su	itable method of handling a blood
	stai	ned knife with few hairs?		
٠	A)	Holding a knife with its handle		
	B)	Holding the knife with tips of inde	x fing	er and thumb
	C)	Remove the hairs and handle the	knife a	as usual
٠.	D)	Hold the blade with the tips of ind	ex fin	ger and thumb.
57 .	Whi	ch of following could be examined	to lini	c a person or object to a particular
,	loca	tion?		
	A)	Soil and minerals	B)	Tool marks
	C)	Paint	D)	Hair and fibre.

58.	Mas	ss spectrometry is the technique ar	plied to	o find out
	A)	trace elements	`B)	functional groups
	C)	molecular structure	D)	molecular weight.
59 .	To o	determine the molecular weights o	f organ	ic compounds in complex mixtures
	whi	ch of the following instruments is o	conside	red as the best ?
	A)	Flame photometry	•	
	B)	UV-spectrum meter		
	C)	Gas chromatography and mass s	pectron	netry
	D)	Atomic absorption spectrometry.		
60.	Maj	or types of molecular vibrations ar	e.	
	A)	stretching and bending	B)	push and pull
	C)	see-saw movement	D)	pull and push.
61.	Fin	gerprint region in infrared spectrop	ohotom	eter is
	A)	1·3 — 0·91 cm ⁻¹	B)	13 — 9·1 cm ⁻¹
	C)	130 — 91 cm ⁻¹	D)	$1300 - 910 \text{ cm}^{-1}$.
62.	Wa	velength range of visible region is		
`	A)	400 nm — 500 nm	B)	400 nm — 760 nm
	C)	400 nm — 600 nm	D)	400 nm — 550 nm.
63.	The	e prism used in UV spectrophotom	eter is 1	made up of
	A)	glass	B)	sodium chloride
	C)	quartz	D)	sand.
x 14	107	•	14001]

64.	The	most unsuitable column used in H	PLC to	withstand heavy pressure is
	A)	glass capillary	B)	316 grade stainless steel
	C)	10 cm to 25 cm long	D)	3 mm to 9 mm inner dia.
65.	In h	nigh performance liquid chromatogra	aphy, y	which component is not used?
	Å)	Mobile phase reservoir and solven	t delive	ery system
	B)	Sample injection port and column		
	C)	Detector & waste reservoir, compu	ters &	recorder
	D)	X-ray bulb.		
66.		analysing pesticides the best o	letecto	or that can be employed in gas
	A)	flame ionization detector	B)	nitrogen phosphorous detector
	C)	atomic emission detector	D)	electrolytic conductivity detector.
67.	Hea	ad space analyser is best used for w	hich o	f the following analyses?
	A)	Blood alcohol level analysis	B)	Protein analysis
	C)	Carbohydrate analysis	D)	Fat analysis.
68.	In p	ore-coated thin layer chromatograph	ic plat	tes, the layers are supported by
	A)	glass	B)	plastic sheets
	C)-	aluminium foil	D)	all of these.
69.	The	analysis time for thin layer chroma	itograp	ohy is
	A)	3 — 15 minutes	B)	3 — 15 seconds
	C)	3 — 15 hours	D)	3 — 15 days.
_ [• 4	A 22		14001	Turn over

70. Match List I correctly with List II and select your answer using the codes given below the lists:

			List	I				List II
		a)	Shella	c in ale	cohol		1.	Easy separation
		b)	Talcu	n powe	ler	, .	2.	Hastening material
		c)	Wire r	nesh			3.	Cohesion among the particles
		d)	Comm	on sal	t		_: 4.	Reinforcing material
	Code	e s :						
		а	. b	c.	d			
	A)	4	3	2	1			•
	B)	3	1	4	2			
	C)	3	2	4	1			•
	D)	4	2	1 .	3.	٠.		
71.	In a	firea	arm cas	se, the	bullet	and ca	rtridge	cases were recovered. The correct
	proc	edure	e for ma	arking	the ide	ntificatio	on (ini	tials) to be made by the I.O. on the
	seiz	ed ite	m will t	e		•		
·	A)	initia	al the ca	artridge	e case o	on the b	ase and	I the bullet on the sides
	B)	initi	al insid	e of th	e cartr	idge cas	e near	bullet end and initial the bullet on
		the	base	•				
	C)	both	ı (A) & (B) are i	ncorre	e t		
	D)	both	ı (A) & (B) are i	incorre	ct.		

72 .	In a	theft wire case, you have collected	the o	cut edges of the wire. Which of the
	follo	owing tools do you consider most ap	prop	riate for seizure and for comparing
	the	cut edges of the wire connecting the	accus	sed with the crime?
	A)	Hack-saw blade	В)	Cutting plier
	C)	Wrench	D)	Knife.
73.	Cha	un of custody refers to transmission	of ma	terial evidences from
	A)	court to forensic science laboratory	· ·	
	B)	crime scene to court		
	C)	forensic science laboratory to court		
	D)	all of these.	-	
74.	A fo	potwear abandoned at the scene of	crim	e by a suspected accused can be
	mar	ked or labelled in		a de la companya de l
	A)	sole	B)	insole
	C)	sides	D)	all of these.
75.	Whi	ch is the most important specimen	n tha	t can throw light on anti-mortem
•	natu	are of the fire ?		
	A)	Stomach	B)	Brain
	C)	Blood	D)	Liver.
76 .	Whe	n a bunch of cut hair is removed	l fron	n scene of crime it is possible to
	asce	rtain		
	A).	human or animal origin	B)	sex
;	C)	age	. D }	all of these.
x 140	07	1	1001	[Turn over

77 .	The	The rifled firearm involved in a shooting incident can be determined by					
	A)	presence of rimfire cartridge					
	B)	size and striations on outer surface of bullet					
	C)	presence of land and grooves					
	D)	all of these.					
78.	Arse	enic metal poisoning is more evident by taking samples from					
	A)	hair B) nails					
	C)	both (A) & (B) are incorrect D) both (A) & (B) are correct.					
79.	The	correct system to be followed for Gun Shot Residue (GSR) collection is					
	A)	rubbing the right and left palms of the suspect with wooden shafted cottor					
		swab with 5% nitric acid					
	B)	rubbing the right and left palms of the suspect with plastic shafted cottor					
		swab with distilled water					
	C)	rubbing the right and left palms of the suspect with plastic shafted cotton					
		swab with 5% nitric acid					
	D)	all of these.					
80.	The	order of steps to be followed by a forensic scientist in the scene of crime is					
•	A)	Recognition, Documentation, Collection and Preservation					
	B)	Documentation, Recognition, Collection and Preservation					
	C)	Preservation, Recognition, Documentation and Collection					
	D)	Recognition, Preservation, Documentation and Collection.					
x [14	107	[14001]					

81.	In g	enuine currency notes, t	he security threa	d is introduced	· .
	A)	at the time of printing	•		
	B)	at the time of manufac	ture of paper	,	
· !	C)	after printing	·		
F	D)	before printing.	•		
82.	Wha	at should not be done to	the recovered too	l marks ?	
	A)	To transport the tool to	the laboratory		·
	B)	To make test tool mark	s at the crime sce	ene	
	C)	To take photographs of	f the tool		
	D)	To protect the cutting	portion of the tool	•	
83.	Pas	sing a jet of steam is to	restore the obliter	ated marks on	
	A)	plastics	B)	leather	. 1
	, C)	wood	D)	stainless steel.	
84.	Ho	w are punched marks ma	ade ?		
	A)	By engraving			
	B)	By casting			
	C)	By striking the metal s	surface with a die		
	D)	By moulding.	•		e e
85.	Wh	ether is it possible to res	tore a erased cas	t marks?	
	A)	Possible	. В)	Sometimes possible	
	C)	Always possible	D)	Not possible.	
x 14	107		14001		[Turn over

x [1407]

86.	Which tool may not make a compression mark?							
-	A)	Hammers	B)	Punches				
	C)	Dies	D)	Scissors.				
87.	A to	ol mark caused by a tool scraping o	ver ar	object or surface softer than itself				
-	is			·				
	A)	striated mark	B)	breech mark				
	C)	bench mark	D)	sickle mark.				
88.	The	better preservation of tool mark is						
	A)	casting						
	B)	photography						
	C)	drawing .						
	D) photography to scale followed by casting.							
89.	Fixi	ng the size and shape of a tool by ob	servin	g tool mark is				
	A)) individual characteristics of the tool						
	B)	class characteristics of the tool						
	C)	C) independent characteristics of the tool						
	D)	O) dependent characteristics of the tool.						
90.	Whe	ere does the term 'Forensic' come fro	m ?					
	A)	The Greek word 'forum'	B)	The Latin word 'forum'				
	C)	The French word 'forum'	D)	None of these.				
91.	The	first chemical examiner's laboratory	was s	started at				
	A)	Calcutta, 1953	B)	Bombay, 1830				
	C)	Madras, 1849	. D)	Agra, 1864.				

92.	Wh	on was the 90% of Human G	enome Projec	t completed?			
	A)	July 26, 2001	В)	June 26, 2000			
	C)	May 26, 1999	D)	April 26, 1998.			
93.	Wh	ich of the following cannot b	e used for DN	A analysis ?			
	A)	Blood stain	В)	Seminal stain			
	C)	Urinary stain	D)	Salivary stain.			
94.	The	branch of Forensic Science	e which deal	s with the identific	ation of a dead		
	bod	iy in an unrecognizable state	using dental	records is			
	A)	Forensic Anthropology	В)	Forensic Pathology	,		
	C)	Forensic Entomology	D)	Forensic Odontolo	gy.		
95.	Wh	ich of the following is the	medical cond	lition that occurs a	after death and		
	res	ults in the stiffening of musc	le mass?				
	The	e rigidity of the body graduall	y disappears	24 hours after death	1.		
	A)	Rigor Mortis	3)	Livor Mortis			
	C)	Autopsy	D)	Algor, Mortis.			
96.	Wha	at is the use of the field instr	ument 'Intoxil	lyzer' ?			
	A)	To determine the alcoholic	consumption	of an individual			
	B)-	To determine the sugar and alcohol consumption of an individual					
÷	C)	To determine the poisonous gas consumption of an individual					
	D)	To determine the blood pre	ssure and sug	ar level.			
x 14	07]		14001		[Turn over		

97.	Whic	ch is the world's largest Forensic S	cience i	Laboratory?
	A)	Central Investigation Agency		•
	B)	Central Forensic Science Laborate	ory	
	C)	Federal Bureau of Investigation		
	D)	None of these.		
98.	The	French man who demonstrated ho	w the p	orinciple enunciated by Gross could
	be in	ncorporated within a workable labo	ratory,	is
	A)	Edmond Locard	В)	Hans Gross
	C)	Albert S. Osborn	D)	Leone Lattes.
99.	Who	undertook the first definitive	study	of fingerprint and developed a
	meth	nodology of classifying them for fili	ng?	
	A)	Leone Lattes	B)	Alphonse Bertillon
	C)	Francis Galton	D)	Mathieu Orfila.
100.	The	Detective Novel 'A Study in Scarlet	' was p	ublished in
	A)	1887	B)	1886
	C)	1885	D)	1884.
101.	Lase	er detection of fingerprints is done	with	
	A)	argon laser	B)	continuous wave of argon laser
	C)	neon laser	D)	krypton laser.
102.	Fing	erprint loop pattern is subdivided	into	•
	A)	radial loop and ulnar loop	B)	radius loop and ulnar loop
	C)	radial loop and ultimate loop	Ď)	restored loop and ulnar loop.
x 140) 7]		14001	

103.	3. In primary classification of fingerprints, the numerical value assigned to a whorf					
	in right thumb is put in the					
	` A)	denominator	B) ,	numerator		
• • •	C)	left side	D)	right side.		
104.	In fi	ngerprint, when there is a series o	of bifure	cations opening towards the core at		
	the point of divergence of type lines, which of the following is chosen as delta?					
	.A)	The bifurcation outermost to the	core			
	B)	The bifurcation nearest to the con	e			
,	C)	The bifuraction to the left side of	соге			
	D)	The bifurcation to the right side of	of core.	•		
105.	105. Which of the following is not a fingerprint classification formula division?					
	A)	Primary	B)	Secondary		
	C)	Tertiary	D)	Subsecondary.		
106.	In p	orimary classification of fingerprint	s, the r	numerical value assigned to a whorl		
	in le	est middle finger is				
	A)	16	B)	8		
	C)	4	D)	2. ·		
107.	Who	en the fingerprint of the right mic	idle fin	ger is scarred, it is given both the		
	gen	eral type value, sub-classification v	alue of			
	A)	left middle finger	B)	right thumb		
,	C)	left thumb	D)	right index finger.		
x 14	07		14001	[Turn over		

108.	. The latent fingerprints developed with gold and red bronze powders are lifted on			
	A)	black tape	B)	white tape
	C)	red tape	D)	yellow tape.
109.	In si	ilver nitrate method of developing fir	gerpr	ints, it reacts with
	A)	sodium chloride in the fingerprint		
	B)	sweat in the fingerprint	•	
	C)	fat in the fingerprint		
	D)	amino acid in the fingerprint.		
110.	Fing	gerprints dusted with metallic powde	ers cai	n be recorded by
	A)	emission spectrography	B)	absorption spectrography
	(C)	emission electronography	D)	atomic absorption spectrometry.
111.	Phys	sical developer fingerprint processin	g solu	tion contains among other things
	A)	Silver ions	B)	Copper ions
	C}	Gold ions	D)	Nickel ions.
112.	bloc	following are the sequences of exactly fingerprints on non-porous surface.		
	A)	Optical detection techniques, alubenzidine	miniu	m powder, iodine spray, diamino-
	B)	Optical detection techniques, iod benzidine	ine s _l	pray, aluminium powder, diamino-
	C)	Optical detection techniques, dia	minol	penzidine, iodine spray, aluminium
	D)	Optical detection, iodine spray, dia	mino	benzidine, aluminium powder.

113.	Late	nt fingerprint on cartridge cases car	i be d	eveloped by
ı	A)	silver nitrate	B)	sodium chloride
	C) ,	disodium hexapalladate	D)	physical developer.
114.	The	microscope which has the advar	ntage	of presenting a distinctive three-
:	dim	ensional image of an object, is		
٠.	A)	comparison microscope	B)	compound microscope
	C)	stereo microscope	D)	polarizing microscope.
115.	Emp	oty magnification is referred to		
L	A) increasing the total magnification beyond 1000 times the numer			
		aperture of the objective being used	d in a	microscope
	B)	increasing the total magnification	beyor	nd 10 times the numerical aperture
		of the objective being used in a mic	crosco	pe
	C)	increasing the total magnification l	beyon	d 100 times the numerical aperture
		of the objective being used in a mic	rosco	pe
	D)	absence of objective lens in a micro	scope	•
116.	In c	ompound microscope, the objective	produ	ces
	A)	a real image of an object		
•	B)-	a virtual image of an object		
	C)	an enlarged virtual image of an obj	ect	
	D۱	not an enlarged real image of the o	biect.	. •

roa2	4	26
117.	For	obtaining a total magnifying power of 40X, a microscopist should use
	A)	an eyepiece of 10X in combination with an objective of 4X
	B)	an eyepiece of 10X in combination with an objective of 30X
	C)	an eyepiece of 10X in combination with an objective of 40X
	D)	an eyepiece of 5X in combination with an objective of 40X.
118.	A ty	pe of image that cannot be viewed directly is called
	A)	virtual image
	B)	real image
	C)	image that is projected on to a motion picture camera
	D)	both (B) & (C).
119.	'Con	oscopic observation' is possible in
	A)	petrographic microscope B) stereo microscope
	C)	binocular compound microscope D) scanning electron microscope.
120.	Thre	ee-dimensional image can be obtained in
	A)	binocular compound microscopes
	B)	compound microscopes
	C)	stereo microscopes
	D)	both (A) & (C).
121.	In T	ransmission Electron Microscope, the electrons used in forming the image
	A)	pass through the sample
	B)	do not pass through the sample
	C)	are scanned across the sample in a raster pattern
	D)	hash (A) 0- (C)

[Turn over

		-	•		
122.	The	purpose of explaining to the s	ubject to	be tested about the plans for a	
	polyg	graph examination, a reasona	ble time	e in advance of the scheduled	
	exan	nination, is			
	Á)	to give truthful person a chance	'to cool o	off	
	B)	to increase the apprehension of	detection	on the part of a lying subject	
•	C)	to ally whatever apprehension a	a truthfu	l person may have with respect to	
		physical harm from the instrum	ent attaci	hments	
	D)	all of these.			
123.	3. Reid polygraph is an instrument used for recording				
	A)	change in blood pressure, pulse	and resp	piration of a subject	
	B)	the Galvanic Skin Reflex of a su	bject		
	C)	certain muscular activity, part	icularly,	muscular pressure exerted by the	
	subject's body, forearms, thigh or feet				
	D)	all of these.			
124.	The	instrument which Cesare Lombre	oso usęd	for detecting deception, was	
	A)	hydrosphygmograph	В)	polygraph	
	C)	polysomnograph	D)	galvanometer.	
125.	The	instrument that measures ph	ysiologica	al changes of the body that are	
	trigg	ered by emotional responses to s	pecific ve	erbal questions is called	
	A)	brain mapping	В)	brain fingerprinting	
	C)	narco-analysis	, D)	polygraph.	

14001

126.	Where a person is in police custody or deprived of his freedom in any significant						
	way by the police, he must be told, prior to any interrogation (i) that he had a						
	right to remain silent; (ii) that anything he said could be used against him;						
	(iii) that he had a right to a lawyer; and (iv) that if he could not afford a lawyer,						
	one	would be provided for him without o	costs.	This procedure is referred to as			
	A)	Miranda warnings -	B)	Rule of discovery			
	C)	General rejection rule	D)	General inadmissibility rule.			
127.	The	chief source of energy for the produc	ction (of speech sound is			
	A) .	expiratory air	B)	inspiratory air			
	C)	blood pressure	D)	either (A) or (B).			
128.	An i	nstrument that converts speech into	a vis	ual graphic display is called as			
	A)	sound spectrograph	B)	video spectral comparator			
	C)	UV-VIS spectrograph	D)	either (A) or (B).			
129.	The	polygraph is a technique used for	-				
	A)	detecting deception					
	B) -	detecting lies					
	C)	obtaining information from an unce	oopera	ative suspect			
	D)	extracting information from the bra	ain.				
130.	Pho	netics is a subject that studies					
	A)	how humans speak		•			
	B)	how the speech is transmitted acou	ıstica	lly			
	C)	how the speech is perceived					
	D)	all of these.					

131.	In a	volce spectrogram one can obser	ve	•
-	A)	voice bars	B)	resonance bars
	C)	silence/pause	D)	all of these.
132.	The	effective speaker recognition may	not be	possible due to
	A)	the recording of control speech	n sampl	es after months or years after the
	B)	incooperative attitude of the su supposed psychological condition	-	o obtain control speech samples in e disputed utterance
	C)	the recording of the control s disputed utterance was made	speech s	samples within a month after the
-	D)	(A) and/or (B).	,	•
	The	average fundamental frequency	of vibrat	tion of the vocal cords, for children.
	A)	equal to that of males		
	B)	lesser than that of males		
	C)	greater than that of males and for	emales	
	D)	lesser than that of females.		
		average fundamental frequency veen	of vibrat	tion of the vocal cords, for males, is
	A)	180 Hz and 300 Hz	B)	300 Hz and 600 Hz
	C)	90 Hz and 140 Hz	D)	900 Hz and 1600 Hz.
135.	Foot	tprint impressions in blood on no	n-porous	s surface can be enhanced by
	A)	amido black		
.]	B)	diaminobenzene		
. (C)	protein dye with 5-sulphosalicyli	c acid	
1	D)	protein dye.		
t 1407	7		14001	[Turn over

136. Consider the following statements:

- I. The weight of the person has a great deal of influence on the rate of wear
- II. The manner in which a person walks also influences the wear
- III. The sex and body type of the wearer also can play a role in the wear
- IV. The occupation and habit of the wearer can also have impact on shoe wear.

Of these statements:

A) Falone is correct

B) I & II are correct

C) I, II & III are correct

D) all are correct.

137. Footwear random characteristic means

- A) intentional characteristics
- B) characteristics that depend upon chance
- C) characteristics specified during manufacture
- D) characteristics that are present on a new shoe.

138. Carbon paper can be used for lifting footwear residue impressions

- A) if the impression is tightly bound to the surface
- B) if the impression is not tightly bound to the surface
- C) if the impression is wet
- D) if the impression is dry.

139. Consider the following statements:

	۲.	I. It is normal for gait characte	ristics :	to vary within the same individual		
ı	II. The gait characteristics change with increased speed of walking					
		III. Gait characteristics will not	vary wi	thin the same individual		
		IV. There is no change in gait walking.	t chara	acteristics with increased speed of		
, k i i	Of t	hese statements				
·	A)	I alone is correct	B)	I & II are correct		
	C)	I, II & III are correct	D)	all are correct.		
140.	O. Which one of the following is used as a releasing agent in footprint casting process?					
	A)	Talc powder	В)	Shellac		
	C)	Plaster of Paris	D)	Dental stone.		
141.	lmp	ressions of wet origin on dirty surf	aces ar	e lifted with		
-	A)	Plaster of Paris	3)	dental stone		
	C)	commercial gelatin materials	D)	transparent tapes.		
142.	2. β-calcium sulphate hemihydrate is commonly known as					
	A)	Plaster of Paris	B)	dental stone		
•	C)	silicone	D)	alginates.		
143.	The	stones' compression strength rang	es fron	1 "		
	A)	100 to 500 PSI	B)	500 to 1000 PSI		
	C)	1200 to 2000 PSI	D)	8000 to 15000 PSI.		
x 140	7	į	14001	Turn over		

144.	Fron	t tyre stance is			
	A)	the distance between front axle	and re	ar axle	
	B) the distance between centre to centre of front tyres				
	C)	the distance between front left	yre and	l rear right tyre	
	D)	the distance between road surfa	ace and	top of tyre.	
145.	The	type of two-dimensional impres	sion th	at occurs when a footwear deposi	
	mate	erial on to a surface is			
	A)	positive impressions	B)	negative impressions	
	C)	surface impressions	D)	sunken impressions.	
146.	Gait	characteristics of a person are			
	A)	individual characteristics			
-	B)	class characteristics			
	C)	neither individual nor class char	acteris	tics	
	D)	random characteristics.			
147.	Whe	n a vehicle hits a tree head on, th	ie occu	pants of the vehicle will move	
	A)	backward with reference to the	lirectio	n of impact	
	B) .	forward with reference to the dir	ection		
	C)	sidewards with reference to the	directio	n .	
	D)	upwards with reference to the d	lrection		
148.	In n	notor vehicle accident cases paint	smear	at the point of contact is	
	A)	light and thin	В)	heavier	
	C)	strong and thick	D)	lighter.	
x 14	07		14001		

149.	. In motor vehicle accidents wheel 'lock up' shows					
	A)	skid mark	B)	yaw mark		
	C)	collision mark	D)	acceleration mark.		
150.	A sl	kid mark depends on factors	including			
	A)	history of the motor-cycle	B)	type and conditions	of the tyres	
	C)	conditions of road surface	D)	all of these.		
151.	In v	vehicular accidents paint sm	ear along the	direction of contact i	s heavier due	
	to		,			
\$. \$. \$.	A)	dragging	В)	heat and friction		
	C)	force	D)	collision.		
152.	Tol	bring the vehicle to stop one	has to			
1	A)	reduce the kinetic energy o	f the vehicle t	o zero		
	B) convert kinetic energy to some other than energy					
!	C) convert kinetic energy into another type of energy					
!	D)	all of these.		•		
153.	The	conservation of energy law s	hows that			
	A) the total energy of the system at the beginning of the process is not equal to					
	the total energy of the system at the end of the process					
	B) the total energy of the system at the beginning of the process is equal to the					
		total energy of the system a	t the end of th	ne process		
	C)	both (A) & (B)				
1	D)	none of these.				
x 140	7	ų .	14001	•	[Turn over	

r Sma	2	, ,	**	
154.	Cros	ss-section of multilayered paint fla	kes ind	icate
	A)	the number of layers of paint	B)	the colour of each layer
	C)	soil and debris inclusion	D)	all of these.
155.	The	metallic paints in automobiles con	ntain	. ,
	A)	iron	В)	lead
	C)	aluminium	D)	nickel.
156.	In •	case of examination of typewri	tten do	cuments, examination is possible
	beca	ause of		
	A)	the wear and tear of the typewrit	er	•
	B)	the make and model of the typew	vriter	
	C)	typed by inexperienced typist	·	
	D)	all of these.		
157.	Wh	ile obtaining the standard or requ	est writi	ng from the accused
	A)	he should be shown the question	ned docu	ument
	В)	he should be provided with instr	uctions	to spell
	C)	he should be corrected in his pu	nctuatio	ons
	D)	none of these.		
158.	For	ged signatures may be		
	A)	traced	B)	simulated
:	C)	simple forgery	D)	all of these.
x 14	07		14001) ·

159.	Which one of the following is not a rifled firearm?					
10 m	A)	Revolver	B)	Pistol		
· •	C)	Shotgun	D)	Sten gun.		
160.	Whi	ich of the following features is most	likely	to differ in forged writing from the		
. 1	gen	uine writing?				
i i	A)	Pictorial effect	B)	Slope of letters		
, • •	C)	Average size of letters	D)	Fine quality.		
161	. The	most preferred method used for the	e dete	ection of 'GSR' particles, in terms of		
F !	con	aposition of elements and shape and	l size d	of the particles, is		
v. S	A)	X-ray fluorescence spectrometry				
4	B)	atomic absorption spectrophotome	etry			
	C)	scanning electron microscopy with	n ener	gy dispersive X-ray analyser		
,	D)	neutron activation analyser.	,	•		
162	162. Sample application technique depends on					
	A) qualitative analysis & quantitative analysis					
	B)	work load & time				
i ì	C)	type of separation layer & sample	volum	ne e		
<u>.</u> J. :	D)	all of these.		•		
163	. 'Po	lymerase chain reaction' relates to	*			
	A)	Isoenzyme studies	•			
	B)	Haptoglobulin studies				
	C)	DNA typing studies	-			
	D)	Electrophoresis studies.				
F 2	203	x 1407	14001] [Turn over		

164.	Jun	nping genes are also called as			
	A)	Pseudogenes	B).	Microsatellites	
-	C)	Minisatellites	D)	Transposons.	
165.	The	genetic material consists of	-		
	A)	nucleic acids	B)	amino acids	
	C)	protein molecules	D)	adenosine triphosophate.	
166.	Whi	le investigating a case of sexual ass	sault (on a post-pubescent virgin girl you	
	obse	erve blood drops at the scene of co	rime a	and recover blood stained clothing	
	from	the victim and accused because			
	A) blood stain evidence would be useful to substantiate violence				
	B)	in the absence of seminal stains,	bloo	d stain would not be sufficient to	
		prove sexual assault			
	C) even in the absence of seminal stains, blood stain would be sufficient to				
,		prove the charge of sexual assault	if epi	thelial cells are located in the blood	
	stains				
	D)	blood stain would be useful in	establ	ishing the scene of crime beyond	
		doubt.			
167.	Anti	ibodies are carried in the		. ·	
	A)	Serum	B)	Plasma.	
	C) _	Red Blood Cells	D)	White Blood Cells.	
168.	Pred	cipitin test is also specific for		•	
	A)	blood	B)	tissues	
\	C)	seminal fluid	D)	all of these.	
				•	

'	The shape of blood droplets striking a surface at 90° on smooth hard surface will					
	be	•				
i	A)	oval	В)	elongated		
	C)	circular	D)	irregular.		
170.	The	physical evidence, 'Blood' from th	e crime	scene has		
	A)	class characteristics				
•	B)	special characteristics				
	(C)	class and individual characterist	ics			
	D)	group characteristics.				
171.	Whe	en a blood drop falls, it produces	elliptical	shape when the angle of incidence		
• ,	is b	eyond				
. A	A)	30°	B)	40°		
	C)	50°	D)	60°		
172.	172. The carrier gas used in gas chromatography is					
: .	A)	nitrogen	B)	phosphene		
	C)	arsine	D)	zero air.		
173.	The	refractive index of glass is about				
	A)	1.50	B)	1.33		
	C)	0.15	D)	1.03		
174.	174. Revolver is					
	A)	rifled hand gun	B)	smooth bored hand gun		
r ·	(C)	muzzle loading firearm	D)	a sporting firearm.		
x 140	7		14001	[Turn over		

175.	5. The carrier gas for gas chromatography — mass spectrometer is				
٠	A)	Helrim	B)	Carbon dioxide	
	C)	Ammonta	D)	Chlorine.	
176.	Mor	phology of air comprises		,	
	A)	bulb, shaft, tip	B)	medulla, pigments, tip	
	C)	bulb, cortex, root	D)	tip, cuticle, cortex.	
1.77.	Hun	nan premolars are termed as		. by dentists.	
	A)	single cuspid	В)	bisucpid	
·	C)	tricuspid	D)	none of these.	
178.	Fibr	es for microscopic examination sho	uld be	washed with	
	A)	ether	B)	ethanol	
	C)	xylene	D}	xylocaine.	
179.	The	strongly pigmented hair may best b	e stud	lied after	
	A)	washing with acid	B)	taking longitudinal section	
	C)	taking cross-section	D)	scanning electron microscope.	
180.	Fen	noral head is present in			
-	A)	radius	B)	humerus	
	C)	femur	D)	fibula.	
181.	Dea	th is caused in Judicial hanging du	e to fr	acture dislocation of	
	A)	C ₃ C ₄ C ₅ vertebrae	В)	C ₂ C ₃ C ₄ vertebrae	
	C)	$C_1 C_2 C_3$ vertebrae	D)	C ₄ C ₅ C ₆ vertebrae.	
14	07	·	14001	•	

182.	Synthetic fibres can be examined by						
١.	A)	Pyrolysis GC	B)	Gas chromatograph			
	(C)	HPLC	D)	TLC.			
183.	183. How many bones are present in each human foot excluding seassamoid bones?						
•	A)	26	B)	22			
	C)	24	D)	25 .			
184.	Sma	art bomb is essentially					
ı	. A)	an ordinary bomb with usual fuse	and e	xplosive material			
	B)	an electronic sensor and a built-in	contr	ol system			
,	C)	a set of adjustable flight fins and a	batte	ry ·			
: .	D)	all of these.					
185.	Per	cussion cap contains		•			
	A)	Gun powder	B)	mercury fulminate			
y .	C)	PETN	D)	NGNC.			
186. A time bomb which is operated by a clock mechanism may explode							
	A)	within 24 hours	B)	within 12 hours			
	C)	within 60 minutes	D)	within 60 seconds.			
187. The primary explosive is							
	A)	Lead azide	B)	NGNC			
	C)	Tetryl	D)	Black powder.			
w 1376	<u>የ</u>	· -	4001	· / Turn over			

188.	The	preliminary test done to identify	the ex	plosive substance in the scene of
	crim	e is		
	A)	Spot test	В)	Ion scan - 400
	C)	Х-гау	D)	Laboratory test.
189.	Crat	er formation is significant of	ı	
	A) -	high explosive	B)	low explosive
	C)	cracker composition	D)	gas cylinder explosion.
190.	1, 3,	, 5 trinitro 1, 3, 5 triazo cyclohexane	is	
	A)	TNT	B)	Tetryl
	C)	RDX	D)	HMX.
191.	Dou	ble-base smokeless powder is/are		•
	A)	Liquid explosive		
	B)	ANFO		•
	C)	NC + NG (Nitrocellulose + Nitrogly	cerine)
	D)	Acetylene gas + Air mixture.		
192.	An I	i.E.D. is of		
	A)	service pattern		
	B)	any size or any shape		
	C)	designed by military personnel		, -
	D)	ballistically shaped device.		

193.	Dog	s can sniff accelerants efficiently l	by	
. *	A)	taking longer duration of time		
% 3	B)	covering small areas in short tim	ne	
*	C)	covering large areas in short tim	e	
. 4	D)	by giving multiple breaks.		
194.	The	mass of flame that detached from	the fire	and rise into the air is called
	A)	pyrolysis	B)	firebali
;	C)	flash point	D)	none of these.
195.	A cl	hemical transformation in which h	eat ene	rgy is liberated, is referred to as
	A)	exothermic reaction		•
	B)	endothermic reaction		
	C)	heat of combustion		
	D)	explosion.		. •
196.	A sı	ubstance that supplies oxygen to a	chemic	al reaction is
7.	A)	reducing agent	B)	oxidizing agent
	C)	accelerant	D)	catalyst.
197.	The	minimum temperature at which a	fuel bu	rns is referred to as
	A)	spark temperature	B)	starting temperature
	C)	ignition temperature	D)	primary temperature.
K 140	7		14001	[Turn over

198.	A rug soaked in linseed oil is an example of				
	A)	exothermic reaction	B)	endothermic reaction	
	C)	spontaneous ignition	D)	all of these.	
199.	99. A typical burn pattern resulting from the use of liquid acclerants is calle				
	A)	spalling	B)	incendiarism	
	C)	puddling	D)	both (A) & (B).	
200. Thermochemistry is the study of					
	A)) how heat is propagated during chemical reaction			
	B)	3) how heat is generated during chemical reaction			
	C)	how heat is radiated during chemic	eal rea	ection	
	D)	all of these.			