

Ques. No.	Question	Correct Ans	Option1	Option2	Option3	Option4
1	With few exceptions, the designation of rifled firearms with cross-sectional diameter less than 0.600 inch, is generally given by which of the options?	Caliber	Groove diameter	Caliber	Cross-sectional diameter of chamber of barrel	Diameter of Head of cartridge fired from it
2	The terms 'grooves' and 'lands' are associated with which of the following?	Rifles	SBBL smooth-bore shot-guns other than paradox guns	0.410 - musket	DBBL smooth-bore shot-guns other than paradox guns	Rifles
3	The tapered portion of barrel connecting 'chamber' and 'bore' in a rifled firearm (small arm) is called:	Leed	Leed	Chamber cone	Breech	Knuckle
4	The function of a primer is:	To ignite the propellant charge	To save the firearm from erosion	To provide lubrication	To ignite the propellant charge	To propel the bullet
5	Which is an ingredient of priming mixture loaded in small arms ammunition?	Lead styphnate	RDX	PETN	Lead styphnate	Tetryl
6	The conventional black powder consists of potassium nitrate, charcoal and sulphur in which of the following proportions?	75:15:10	75:10:15	85:10:15	70:10:20	75:15:10
7	Which of the following is semi-smokeless powder?	Nitrocellulose and black powder	Nitroglycerine	Nitrocellulose and nitroglycerine	Nitrocellulose	Nitrocellulose and black powder
8	Gun cotton is obtained by?	Nitration of cotton	Sterilisation of cotton	Ammonification of cotton	Nitration of cotton	Gelatinisation of cotton by ether-alcohol mixture

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9	Generally, a groove is provided around the cylindrical portion of an elongated bullet fired from small arms. Which of the following is its purpose?	To crimp the bullet with cartridge case	To increase the range of bullet	To make the bullet stable in its flight	To crimp the bullet with cartridge case	To make the bullet lose more energy inside human body
10	What is the purpose of air-cushion wad loaded in a 12-bore cartridge?	To expand and seal the bore and to prevent the pellets from direct blow of propellant gases in starting the pellets in motion	To increase the stability life of ammunition	To make the propellant non-hygroscopic	To produce shot stringing	To expand and seal the bore and to prevent the pellets from direct blow of propellant gases in starting the pellets in motion
11	Firing pin marks on a fired cartridge case are surrounded by?	Breech face and / or ejector marks	Extractor marks	Chamber marks	Breech face and / or ejector marks	Magazine marks
12	Depth of grooves in small arms generally lies between?	0.002 inch to 0.01 inch	1 cm to 4 cm	2 mm to 4 mm	0.002 inch to 0.01 inch	0.25 inch to 0.5 inch
13	Estimation of time elapsed since firing has been attempted by?	Study of chemical changes in discharge residue in the barrel / nitrite variation	Study of chemical changes in discharge residue in the barrel / nitrite variation	Harrison and Gilroy Test	Price Test	Atomic absorption spectrometry
14	Which of the following are helpful to estimate range of firing?	Scorching, blackening, tattooing around gun-shot holes / wounds	Scorching, blackening, tattooing around gun-shot holes / wounds	Direction of margins of gun-shot holes / wounds	Presence of blood of victim at scene of crime	Deposition of mercury in barrel
15	Lead in firearm discharge residue is best identified by?	Soft x-ray radiography	IR photometry	Dermal nitrate test	Soft x-ray radiography	Neutron activation analysis
16	Dermal nitrate test is reaction of nitrate residue collected from the hands of a shooter in presence of diphenylamine and sulphuric acid. In this test, which of the following colours appears?	Blue	Green	Blue	Pink	Grey

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17	Walker's test is used to test:	Nitrite	Nitrate	Sulphate	Carbonate	Nitrite
18	In Harrison and Gilroy's test, which of the following are tested?	Pb, Ba, Sb	Nitrate, carbonate, sulphate	Sb, Pb, sulphur	As, Pb, Hg	Pb, Ba, Sb
19	Firearm is defined in:	Indian Arms Act, 1959	Indian Arms Act, 1959	Indian Arms Act, 1859	Indian Evidence Act	Indian Ammunition Act, 1959
20	Which of the following processes is associated with rifling of barrels of small arms?	Cutting by using scrape / hook cutters	Forging and machining	Cutting by using scrape / hook cutters	Drilling and boring	Milling
21	Which of the following firearms has anticlockwise rifling?	Colt revolver	Webley revolver	Colt revolver	Smith and Wesson revolver	Browning revolver
22	Which of these firearms are NOT manufactured as per standard drawing and specifications?	Improvised firearms	Rifles	Revolvers	Pistols	Improvised firearms
23	The portion of smooth-bore barrel where a constriction is provided near the muzzle end making bore diameter smaller than that of rest of the bore is called:	Choke	Action	Leed	Choke	Breech
24	Which of the following is a class-characteristic of a fired bullet?	Number of lands and grooves	Ejector marks	Breech-face marks	Number of lands and grooves	Striation marks on fired bullet

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25	The markings which are NOT to be found on a cartridge case fired from a revolver are:	Markings left by lands	Markings left by lands	Chamber markings	Firing-pin impressions	Breech-face markings
26	Which of the following is TRUE about striae present in the interior surface of barrel of a firearm?	These get initially produced by the tools used for boring of barrel and for cutting of rifling	These are never present	These are class characteristics	These striae never change as the firearm is fired repeatedly	These get initially produced by the tools used for boring of barrel and for cutting of rifling
27	Acidified aqueous solution of which of the following is generally used to restore erased punched identification marks on firearms?	Cupric chloride	Sodium chloride	Barium chloride	Cupric chloride	Ferric chloride
28	The most important tool available for the firearms examiner in linking of fired bullets and fired cartridge cases with the suspected firearm is:	Comparison microscope	Polarising Light microscope	Mylar film and a high voltage electrode	Comparison microscope	Digital video comparator
29	Which of these are individual characteristic marks on fired bullets?	Striation marks	Chamber marks	Striation marks	Extractor marks	Ejector marks
30	The velocity with which a bullet travels inside a target is called:	Penetrating velocity	Penetrating velocity	Striking velocity	Cavitation velocity	Terminal velocity
31	Which of the following is the major factor affecting the trajectory of a projectile in air?	Air-resistance	Magnus force	Poisson effect	Coriolis effect	Air-resistance
32	On which of the following bullets, the effect of air-resistance is least?	Boat-tailed bullet	Round-nose bullet	Flat-nose bullet	Flat- base hollow-point bullet	Boat-tailed bullet

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33	The part of air-resistance acting on a projectile because of creation of a region of low pressure behind it is called:	Base-drag	Yaw	Skin-friction	Base-drag	Drift
34	The angle between the direction of motion of a bullet and its axis is called:	Yaw	Projection angle	Striking angle	Yaw	Angle of incidence
35	The skipping of a bullet from a surface after it had struck the surface is called:	Ricochet	Reflection	Dispersion	Ricochet	Reversion
36	The linkage of fired cartridge cases / bullets with suspected rifled firearms is carried out with the help of which of the following?	Class characteristics of rifled bore and individual characteristics present on some particular parts of firearms	All individual characteristics present on firearm	Class-characteristics of rifled bore	Class characteristics of rifled bore and all individual characteristics present on firearm	Class characteristics of rifled bore and individual characteristics present on some particular parts of firearms
37	A term commonly applied to a crude ,home made firearm whose firing pin is powered by a rubber band, is:	Zip gun	Imitation firearm	Freak firearm	Zip gun	Toy firearm
38	During firing of which of the following ammunitions, the breech-end of barrel or counter bore of barrel acts as anvil?	Rim-fire cartridges	Centre-fire shot-gun cartridges	Centre-fire pistol cartridges	Rim-fire cartridges	Pin-fire cartridges
39	When a firearm is fired, its recoil is due to which one of the following reaction?	Reaction of acceleration of bullet to muzzle velocity and of acceleration of propellant gases as well as muzzle blast	Reaction of acceleration of bullet to its muzzle velocity	Reaction of acceleration of propellant gases	Reaction of muzzle blast	Reaction of acceleration of bullet to muzzle velocity and of acceleration of propellant gases as well as muzzle blast
40	The effect of reduction in barrel length on dispersion of pellets is to:	Increase the spread	Increase the spread	Decrease the spread	Not to effect on spread	Reduce the spread and to produce open spaces in the pattern

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41	Increasing the velocity of a bullet makes it unstable while it is moving in air. What should be done to make it stable?	For stability of bullet, pitch of rifling is to be reduced	For stability of bullet, pitch of rifling is to be reduced	For stability of bullet, pitch of rifling has to be increased	For stability of bullet, pitch of rifling may be increased or not changed	For stability of bullet, there may be straight grooves
42	In a crime committed by a 0.315-rifle, it was found that its firing pin has been filed and the barrel has been cut by about 1 inch from muzzle. Which is the most appropriate option about linkage of an evidence cartridge case and bullet with this rifle?	The fired cartridge case may be linked but bullet cannot be linked	The fired cartridge case and bullet cannot be linked	Both the fired cartridge case and bullet can be linked	The fired cartridge case may be linked but bullet cannot be linked	The fired cartridge case cannot be linked but the bullet can be
43	Brass has been found to be a good material for manufacture of cartridge cases for rifles, pistols and revolver cartridges. Which of the following is the reason?	It provides obturation under pressure and comes back to its original state immediately after pressure is removed	It provides obturation under pressure and does NOT come back to its original state when pressure is removed	It provides obturation under pressure and comes back to its original state immediately after pressure is removed	It neither provides obturation under pressure nor comes back to its original state after pressure is removed, but it is used because it is cheap	It does NOT provide obturation under pressure but comes back to its original state after pressure is removed
44	For a firearm firing belted cartridge, which of the following is defined as head space after the bolt has been locked to barrel?	It is the distance from breech face to the shoulder in the chamber where belt is stopped from entering into the chamber	It is the distance from breech face to the forward point of leed	It is the distance from breech face to point in the chamber where leed commences	It is the distance from breech face to the shoulder in the chamber where belt is stopped from entering into the chamber	It is the distance from breech face to the shoulder in the chamber where rim is stopped from entering into the chamber
45	Which of the following defines 'hangfire'?	Delayed ignition of propellant after the percussion cap has been hit by firing pin	Delayed striking of percussion cap by firing pin after squeezing of trigger	It is misfire of cartridge having boxer primer. It is due to loose or hanging anvil	Delayed ignition of propellant after the percussion cap has been hit by firing pin	It is misfire of a cartridge due to a loose firing pin not striking the percussion cap with sufficient force to fire the cartridge
46	A 0.45 caliber self-loading pistol with 5-inch barrel fires a bullet with velocity of 810 feet per second. If the velocity of the bullet is regarded as constant, how much time will it take to travel 1-inch?	$(1/12) \times (1/810)$ sec	$(5/12) \times (1/810)$ sec	$(1/12) \times (1/810)$ sec	$(12) \times (1/810)$ sec	$(1/12) \times 810$ sec
47	Firing of a pistol or revolver in contact with temple generally results in:	A stellate wound	A gutter wound	Massive destruction of tissues	A stellate wound	Key-hole
48	While doing comparison of marks on crime and test cartridge cases / bullets under the comparison microscope, the minimum number of marks that should match is:	There is no set number of characteristics for positive opinion. It may even be one peculiar mark if it is being repeated in each firing.	At least 5 marks	At least 8 marks	At least 10 marks	There is no set number of characteristics for positive opinion. It may even be one peculiar mark if it is being repeated in each firing.

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49	Photomicrographs are NOT required to be produced in the court of law in India by a Ballistic expert as per which of the case judgement?	Ramanathan v/s State of Tamil Nadu, Criminal Law Journal, 1978	Chunni Lal v/s State of Haryana, Criminal Law Journal, 1977	Harchand Singh v/s State of Punjab, Criminal Law Journal, 1981	Ramanathan v/s State of Tamil Nadu, Criminal Law Journal, 1978	Madan Singh v/s State of Uttar Pradesh, Criminal Law Journal, 1980
50	From a scene of crime, a fired cartridge case was recovered and for the determination of type, make, model of suspected firearm, which of the following are most appropriate?	Head-stamp markings, constructional features, dimensions of cartridge case, presence and relationship between various marks on cartridge case left by firearm	Head-stamp markings	Head-stamp markings and constructional features	Head-stamp markings, constructional features and dimensions of cartridge case	Head-stamp markings, constructional features, dimensions of cartridge case, presence and relationship between various marks on cartridge case left by firearm
51	When firing pin strikes percussion cap of a cartridge, its distinct impression depends upon which of the following?	Strength of main spring	Trigger pull	Shape of cartridge case	Strength of sear spring	Strength of main spring
52	A fired cartridge case fired from pistol bearing two firing-pin impressions was recovered from scene of crime. In order to resolve the issue as to which of the two given pistols has fired it, which one of the following is statements most appropriate?	Examination for the presence of breech-face / chamber / ejector marks on evidence and test cartridge cases may resolve the issue otherwise, it is not possible	The most distinct firing pin impression out of these two had fired this cartridge case. Like this, it can be resolved	Examination for the presence of breech-face / chamber / ejector marks on evidence and test cartridge cases may resolve the issue otherwise, it is not possible	Matching of extractor marks on evidence and test cartridge cases may resolve the issue	Matching of firing pin drag marks on evidence and test cartridge cases may resolve the issue
53	While conducting test firings in connection with linkage of evidence cartridge cases with suspected firearm, some test firings should be conducted after oiling cartridges. This will help to obtain test cartridge cases having a clearer impression of the:	Breech-face marks	Firing-pin marks	Breech-face marks	Chamber-marks	Extractor-marks
54	Individual characteristics on various parts of firearms leaving marks on fired cartridge cases / bullets are produced as a result of:	Through machining operations, wear and tear as well as by some natural formations like rust etc.	Only because of machining operations like cutting, filling, grinding, polishing etc.	Only because of wear and tear of firearms	Only because of some natural formation like rust	Through machining operations, wear and tear as well as by some natural formations like rust etc.
55	The angle of departure of a bullet fired from a small arm for its maximum range in air is:	Less than 45 degree	Equal to 45 degree	Less than 45 degree	Greater than 45 degree	Greater than or equal to 45 degree
56	For calculation of trajectory of a bullet in air, the Ingalls' Ballistic Tables are sometimes used. If X = range in feet, s(V) is the space function for muzzle velocity V ft/sec and s(v) is the sapce function for remaining velocity, v ft/sec, at range X, then, ballistic coefficient of the bullet is given by which of the following relations?	$C = X / [s(v) - s(V)]$	$C = X / [s(v) - s(V)]$	$C = X / [s(V) - s(v)]$	$C = X \{s(v) - s(V)\}$	$C = X \{s(V) - s(v)\}$

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57	For given muzzle-velocity of a bullet, the range X (ft.), ballistic coefficient, the time of flight T in seconds, for range X calculated by using Ingalls' Ballistic Tables, then the maximum height H, of trajectory for range 'X' is given by which of the following relations?	H in feet = $(2T)^2$	H in feet = T^2	H in feet = $(2T)^2$	H in feet = $12T^2$	H in feet = $20T^2$
58	Let S = rate of spin imparted to the bullet by the rifling when the bullet leaves the muzzle, U = muzzle velocity of bullet, d = pitch of rifling; 'S', 'U' and 'd' are connected by which of the following relations?	$S = U/d$	$S = d/U$	$S = U/d$	$S = dxU$	$S = U^2/d$
59	A high velocity cartridge has been designated as 7.62x51 mm cartridge. In relation to this cartridge, which of the following statements is correct?	First number is the caliber of the firearm from which it is fired and the second number is the length of the cartridge case	First number is cross-sectional diameter of cylindrical portion of bullet and the second number is the length of chamber of the firearm from which it is fired	First number is the caliber of the firearm from which it is fired and the second number is the length of the cartridge case	First number is the caliber of the firearm from which it is fired and the second number is the length of the cartridge case	First number is the cross-sectional diameter of cylindrical portion of the bullet whereas the second number represents the length of the cartridge
60	Which of the following is the major factor affecting the rate of burning of propellants is:	Pressure of propellant gases under which burning takes place	Pressure of propellant gases under which burning takes place	Whether the primer is boxer or berden	Shape of base of bullet	Shape of nose of bullet
61	The shape of propellant grains is maintained during its burning or the law of burning of propellant grain by parallel layers was enunciated by?	Piobert	Resal	Chugh	Jones	Piobert
62	Which of the following gives the variation in bullet velocity with bullet travel along the bore?	Initially the rate of rise of velocity is fast and then, after some travel, it slows down	Velocity of bullet rises, reaches a maximum value and then falls to muzzle velocity	Velocity of bullet continues to rise at a constant rate	Initially the rate of rise of velocity is fast and then, after some travel, it slows down	Initially the rate of rise of velocity is slow and then, after some travel, it becomes fast
63	The phenomena of sheared primer causes which of the following marks?	Breech face marks	Firing pin marks	Breech face marks	Ejector marks	Chamber marks
64	In wound ballistic studies, the retardation of bullet with angle of yaw, say 'a' degrees, follows which of the following relations?	$1+(a^2)/169$	$1+(a^2)/169$	$(1+a^2)/169$	$1+(a/169)$	$1+(a^3)/169$

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65	With long-barrel firearms, burning effect in gun-shot wounds is generally observed upto which of the following distances?	Upto about 6 inches	Upto 24 inches	Upto 18 inches	Upto 12 inches	Upto about 6 inches
66	With handguns, the tattooing is generally found upto which of the following distances?	Upto 1 - 2 feet	Upto 1 - 2 feet	Upto 3 - 4 feet	Upto 4 - 5 feet	Beyond 5 feet
67	Firing of a regular 12-bore cartridge from a regular 12-bore gun with cylindrical barrel produces a single entrance hole of maximum diameter of?	4 cm approx.	1 cm approx.	2 cm approx.	3 cm approx.	4 cm approx.
68	Firing of lead bullets by .32 revolver were conducted on a glass sheet covered by a white cloth from a distance of about 1 yard. The area around the hole on the inner side of cloth was found to be blackened. This is due to?	Lead splash	Smoke produced by firing	Lead splash	Gases produced in firing	Flame produced in firing
69	Rotation of cylinder of revolver is achieved when a projection on hammer lever moves in a?	Teeth of ratchet at the rear surface of cylinder	Teeth of ratchet above the cylinder	Teeth of ratchet below the cylinder	Teeth of ratchet ahead of cylinder	Teeth of ratchet at the rear surface of cylinder
70	Let the head-space of firearms meant for firing rimmed and rimless cartridges be 'A' and 'B' respectively. Which of the following is TRUE about these values?	$A < B$	$A = B$	$A < B$	$A > B$	$A \geq B$