

Q. No	Question	Correct Ans	Option1	Option2	Option3	Option4
1	The Snaphounce was a 16th century weapon. Which of the options is TRUE about this weapon?	It was a flint-lock weapon with separate frizzen and pan cover	It was a wheel-lock weapon	It was a flint-lock weapon with separate frizzen and pan cover	It was a flint-lock weapon with integral frizzen and pan cover and with internal sear arrangement	It was a flint-lock weapon with integral frizzen and pan cover and with external sear arrangement
2	The British Brown Bess was a famous historical firearm. Which of the following is TRUE about this firearm?	It was a flint-lock action musket	It was a match-lock action musket	It was a wheel-lock action musket	It was a flint-lock action musket	It was a breech-loading firearm
3	A double action revolver is a handgun. In connection with this revolver, which of the following is correct?	It is a handgun in which a pull of trigger results in rotation of cylinder, cocking of hammer and firing	It is a handgun in which cocking can only be done manually	It is a handgun in which the cylinder automatically rotates, live cartridge comes in line with barrel and the hammer gets automatically cocked after firing first cartridge	It is a handgun in which a pull of trigger results in rotation of cylinder, cocking of hammer and firing	It is a single-shot firearm
4	The internal cross-sectional diameter of cylindrical portion of barrel of 12-bore gun is:	$d = [4.6578 \times (1/12)]^{1/3}$ inches	$d = [4.6578 \times (1/12)]^{1/2}$ inches	$d = [4.6578 \times (1/12)]^{1/3}$ inches	$d = [4.6578 \times (1/12)]^{1/4}$ inches	$d = [4.6578 \times (1/12)]$ inches
5	The internal cross-sectional diameter of bore of TRUE cylinder barrel of 16-bore shotgun is equal to diameter of a lead ball weighing:	28.35 gms	25.68 gms	22.68 gms	28.35 gms	37.8 gms
6	A pump-action shotgun has a magazine. Which of the following is true?	It has tubular magazine in the sliding forend	It has tubular magazine in the stock	It has tubular magazine in the sliding forend	It has a single column box magazine	It has a double column box magazine
7	The action employed in 9 mm High Power FN Browning pistol is:	Short recoil-operated action	Blow-back action	Retarded blow-back action	Short recoil-operated action	Long recoil-operated action
8	In which of the following firearms, the chamber is empty at the instant when trigger is pressed for firing, (the firearm being fired in semi-automatic mode)?	Sub-machine gun carbine 9 mm 1A1	Sub-machine gun carbine 9 mm 1A1	Pistol	Light Machine Gun	AK-47 rifle
9	The rounded front end of the flats of shotgun action block where the forend fits is called:	Knuckle	Tumbler	Strap	Knuckle	Cross-pin
10	In which of the following firearms, the extractors form part of the chambers?	12-bore DBBL guns manufactured by Indian Ordnance Factories and revolvers	12-bore DBBL guns manufactured by Indian Ordnance Factories and revolvers	Pistols and sub-machine gun carbines	Bolt action rifles and INSAS rifles	Light machine gun and self-loading rifles

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11	Which of the following cartridges is fired from AK-47 rifle?	7.62x39 mm	7.62x39 mm	7.62x39 Rmm	7.62x51 mm	5.56x45 mm
12	Which of the following statements is correct?	Caliber of AK-47 rifle is 7.62 mm and that of AK-74 rifle is 5.45 mm	Calibers of both AK-47 and AK-74 rifles are 7.62 mm	Calibers of both AK-47 and AK-74 rifles are 5.45 mm	Caliber of AK-47 rifle is 7.62 mm and that of AK-74 rifle is 5.45 mm	Caliber of AK-47 rifle is 5.45 mm and that of AK-74 rifle is 7.62 mm
13	A ball cartridge is a cartridge loaded with:	Any single projectile whether spherical or elongated or of any shape	A single spherical ball only	A multi-shot spherical ball only	Any single projectile whether spherical or elongated or of any shape	It is a dummy cartridge
14	Which of the following combinations of bullets have steel core?	AK-47 rifle bullet and INSAS rifle bullet	AK-47 rifle bullet and INSAS rifle bullet	0.303 rifle bullet and INSAS rifle bullet	9 mm pistol bullet and AK-47 rifle bullet	0.38 revolver bullet and 9 mm pistol bullet
15	In respect of bullets loaded in .38 revolver cartridges, which of the following is correct?	In some cartridges, it is jacketted and in others it is non-jacketted	It is of lead only	It is always jacketted	In some cartridges, it is jacketted and in others it is non-jacketted	It is soft-nose bullet
16	More than one flash-hole is an indication of which type of primer?	Berden	Boxer	Berden	Shot-gun primer	Rim-fire primer
17	In 7.62 mm self-loading rifle cartridge, boat-tailed bullet is used. Which of the following is the reason behind?	To reduce air-resistance due to base-drag at bullet velocities less than velocity of sound in air	To reduce air-resistance due to base-drag at bullet velocities less than velocity of sound in air	To reduce air-resistance when the bullet velocity is greater than the velocity of sound in air	To reduce friction between bullet and bore by reducing surface area of bullet which comes in contact with bore	To reduce the volume of gases emerging from muzzle prior to bullet exit
18	In 12-bore, 2.5-inch shot-gun cartridge loaded with LG shots, the total weight of these LG shots is approximately equal to:	1 ounce	1 ounce	1 and 1/16 ounce	1 and 1/8 ounce	1 and 1/4 ounce
19	In 12-bore, 2.5 inch cartridge, the total number of shots (pellets) of size 3 loaded in the cartridge is approximately equal to:	150	150	165	130	175
20	In which of the following bullets, cannellure is absent?	9 mm pistol bullet	0.315 rifle bullet	9 mm pistol bullet	0.32 revolver bullet	0.38 revolver bullet

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21	0.38 revolver cartridge has:	Rimmed head	Rebated head	Rimless head	Rimmed head	Belted head
22	The nose of bullet loaded in 0.315 rifle cartridge is:	Soft point	Hollow point	Soft point	Flat point	Spitzer point
23	For appropriate ignition of propellants, there should be proper choice of primer. On which of the following factors, this choice does NOT depend?	Shape of cartridge case	Kind, type and granulation of powder	Volume of cartridge case behind the bullet	Number of flash holes	Shape of cartridge case
24	A 64-grain bullet fired from a rifle has muzzle velocity of 2100 ft./sec. Its muzzle-energy is approximately given by:	630 ft-lbs	530 ft-lbs	630 ft-lbs	730 ft-lbs	830 ft-lbs
25	An evidence fired bullet of 0.500 caliber was recovered from body of a victim. The Investigating Officer sent about 200 bullets and asked the expert if there was any bullet in this collection which matches with the evidence bullet. Which of the following is helpful to the expert in quick eliminations?	Matching of class characteristics on evidence bullet and other bullets	Matching of class characteristics on evidence bullet and other bullets	Matching of individual characteristics on evidence bullet and other bullets	Matching of both class and individual characteristics on evidence bullet and other bullets	Matching of extraneous marks on evidence bullet and other bullets
26	Which of the following firearms leaves firing pin drag marks on fired cartridge cases fired from it?	Factory-made hammerless shotgun	Factory-made pistol	Factory-made hammer shotgun	Factory-made hammerless shotgun	Factory-made sub-machine gun carbine
27	In photomicrographs showing the matching of marks on evidence and test cartridge cases / bullets, which of the following marks are helpful to the defence counsel?	Extraneous marks	Firing pin drag marks	Chamber marks	Extractor marks	Extraneous marks
28	A database relating to marks on cartridge cases / bullets is maintained in:	IBIS	IBIS	AFIS	SICAR	PDQ
29	Sometimes, it is easy to link an evidence fired cartridge case with a country-made pistol. Which of the following is most appropriate?	Much attempts are NOT made to smoothen out various components	These firearms are constructed from cheap quality of iron tubing. Sanitary pipes, electricity pipes may be used	The firing-pin protrusion is large in comparison to that in regular firearm, making large area of firing-pin in contact with percussion cap	The firing-pin hole is of smaller size than that of regular firearms, giving more area of breech-face	Much attempts are NOT made to smoothen out various components
30	At a scene of crime, a man was found dead on his bed with a 12-bore shotgun clasped in both hands, and left side of head blown off. Propellant particles (tattooing) were found on underside of left forearm. Which of the following can be manner of death?	Homicide	Homicide	Suicide	Accident	Struggle

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31	Which of the following are propellants with decreasing burning surface area but increasing volume of gases as burning proceeds?	Moderated powders	Bulk powders	Ballistite	Moderated powders	Cordite
32	The small arms propellants are manufactured in different shapes, like ball, flake, cylinder, single perforated grains etc. For flakes, the web of the grain, as defined in internal Ballistics is:	Its thickness	Its thickness	Its surface area	Its volume	Its weight
33	The ballistic coefficient of an elongated bullet is defined as $BC = \frac{w}{id^2}$ where 'w' is mass of bullet and 'd' is cross-sectional diameter of cylindrical portion of bullet and 'i' is called form-factor. Which of the following is TRUE about the form-factor?	It is a factor which depends upon shape of nose of bullet and its steadiness while moving in air	It is a factor which depends on shape of nose of bullet only	It is a factor which depends upon shape of nose of bullet and its steadiness while moving in air	It is a factor which depends upon shape of nose of bullet and whether the bullet is jacketted or non-jacketted	It is a factor which depends upon shape of nose of bullet and on rifling marks on the surface of bullet
34	A bullet had ricocheted from a metallic surface producing a deep ricochet mark. Which of the following is NOT a characteristic of ricochet phenomena?	The bullet is stable after ricochet	The point of maximum depth of the mark lies near the exit side	The angle of ricochet is more than the angle of incidence	The bullet is stable after ricochet	The point of impact is quite sharp and has bullet-wipe
35	For trajectory determinations using Ingalls' Ballistic Tables, let X = Range, C = Ballistic coefficient, T(u) = Time function for velocity u, V = Initial velocity (ft/sec) and v remaining velocity (ft/sec) at range X, then, the time of flight for range X is given by which of the following relations?	$T = C \{T(v) - T(V)\}$	$T = C / \{T(v) - T(V)\}$	$T = C / \{T(V) - T(v)\}$	$T = C \{T(V) - T(v)\}$	$T = C \{T(v) - T(V)\}$
36	In Walker's test for testing of nitrite pattern around a suspected gun-shot hole in clothes, a cloth moistened with dilute acetic acid is used and heat is applied with electric iron. The acetic acid vapours first convert nitrites to:	Nitrous acid	Nitrous oxide	Nitric acid	Nitrous acid	Nitrate
37	The coefficient of reduction or form-factor 'i' for spherical projectiles is given by which of the following?	i = 2.3	i = 1.3	i = 2.3	i = 3.2	i = 3.5
38	If 'N' is the number of lead pellets of given size in one ounce, then the ballistic coefficient C, of a pellet of this size is given by which of the following relations?	$C = 0.06186/N^{(1/3)}$	$C = 0.06186/N^{(1/3)}$	$C = 0.06186 \times N^{(1/3)}$	$C = N^{(1/3)}/0.06186$	$C = 0.06186/N^{(1/2)}$
39	In revolvers, parts of different chambers are formed at one end of a rod. This rod is known as which of the following?	Ejector rod	Ejector rod	Bar	Action Pin	Strap
40	That part of the gun stock on which the shooter's cheek rests when he takes aim to hit a target, is called:	Comb	Crane	Medallion	Grip	Comb

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41	A 12-bore DBBL side-by-side gun (one barrel-full choke and other TRUE cylinders) manufactured by Indian Ordnance Factories was found to be involved in a crime. Two 12-bore 2.5-inch cartridges loaded with pellets of size 6 were fired from this gun, one from the right and other from the left barrel. Which of the following statements is correct?	The left barrel gives a denser pattern than that given by right barrel in a 30-inch circle at 40 yards	The right barrel gives a denser but irregular pattern than that given by left barrel in a 30-inch circle at 40 yards	The right barrel gives a denser and regular pattern than that given by left barrel in a 30-inch circle at 40 yards	The left barrel gives a denser pattern than that given by right barrel in a 30-inch circle at 40 yards	The densities of patterns given by both the barrels are same in a 30-inch circle at 40 yards
42	Trombone Action is associated with which of the following firearms?	Shot-guns	Sub-machine guns	Pistols	Rifles	Shot-guns
43	Which of the following is the composition loaded in a tracer bullet?	Barium peroxide + Magnesium powder	Barium oxide + Magnesium oxide	Barium peroxide + Magnesium powder	Barium oxide + Magnesium powder	Barium peroxide + Magnesium carbonate
44	Two bullets of same size and shape, but one is less dense than the other, are fired at same muzzle velocity. Which of the following is TRUE about their stability while moving in air?	The lighter bullet will have to be spun faster than heavier bullet	The lighter bullet will require lesser spin to be stable than heavier bullet	Both the bullet will be stable at same spin	The lighter bullet will be stable at a spin lesser than or equal to that given to heavier bullet	The lighter bullet will have to be spun faster than heavier bullet
45	The 12-bore cartridges manufactured by Indian Ordnance Factories have lengths of 2.5 inch and 2.75 inch and are known as Astram / Special / Deluxe / Magna cartridges. Which of the following is TRUE about these cartridges?	The Deluxe and Magna cartridges have lengths of 2.5 inch and 2.75 inch respectively	The Special and Deluxe cartridges are of length 2.75 inch each	The Astram and Magna cartridges are of length 2.5 inch each	The Special and Astram cartridges have lengths of 2.75 inch and 2.5 inch respectively	The Deluxe and Magna cartridges have lengths of 2.5 inch and 2.75 inch respectively
46	Which of the following is TRUE about "degressive" (with decreasing burning surface area as burning proceeds) and "progressive" (with increasing burning surface area as burning proceeds) powders used in smallarms cartridges?	In degressive powders, initially there is more quantity of gas and then goes on decreasing whereas in progressive, initially it is less and goes on increasing as burning proceeds	In both, the quantity of gas that initially comes out is very less and it goes on increasing as burning proceeds	In both, the quantity of gas that initially comes out is maximum and it goes on decreasing as burning proceeds	In degressive powders, initially there is more quantity of gas and then goes on decreasing whereas in progressive, initially it is less and goes on increasing as burning proceeds	In degressive powders, initially there is less quantity of gas and it goes on increasing whereas in progressive powders, it is initially more and goes on decreasing as burning proceeds
47	Which of the following was the main reason for discontinuation of mercuric priming mixtures?	It has strong affinity for water and the cartridges absorbed water in damp climates	The ignition of the propellant was so effective that the propellants burnt very fast to produce high pressures in the firearm	It did NOT produce flame of much volume to efficiently ignite the propellants loaded in rifle cartridge	It did NOT produce flame of enough intensity to effectively ignite the propellants	It has strong affinity for water and the cartridges absorbed water in damp climates
48	The SINOXID priming compositions were based on which of the following compositions:	Lead styphnate	Lead styphnate	Mercury fulminate and Tetracene	Potassium chlorate and Tetracene	Black powder and Tetracene
49	Which of the following is TRUE about SINTOX priming composition?	It is a lead-free composition	It is a lead-free composition	It contains lead azide and tetracene	It contains lead styphnate, potassium chlorate and calcium hypophosphite	It contains lead thiocyanate, mercury fulminate, antimony sulphide and barium nitrate
50	Chemicals like carbamite are added to the smokeless propellants. Which of the following is the reason for this?	It acts as stabiliser	It makes their burning as progressive burning	It acts as stabiliser	To avoid the development of static electricity during their loading into cartridges	To make the propellants non-hygroscopic

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51	In attempts to produce smokeless powders, nitrocellulose was treated with ether-alcohol mixture. Which of the following is the reason?	To bring about gelatinisation of nitrocellulose	To increase the potential energy of the propellant	To bring about gelatinisation of nitrocellulose	In order to stabilise the nitrocellulose	To produce flashless propellants
52	Some potassium salts like potassium sulphate, potassium aluminium fluoride were added to propellants. Which of the following was the reason?	To reduce flash	To make the propellants stable during transport	To reduce flash	To make the propellants non-hygroscopic	To regulate the burning of propellants
53	Which of the following is TRUE about bullets loaded in 7.62 x 39 mm cartridge and 9 x 19 mm pistol cartridge?	The 7.62 mm bullet is sharp pointed and the 9 mm bullet is round nose bullet	Both the bullets are sharp pointed bullets	Both the bullets are round nose bullets	The 7.62 mm bullet is sharp pointed and the 9 mm bullet is round nose bullet	The 7.62 mm bullet has round nose and the 9 mm bullet has sharp point
54	The iron pyrite used in wheel-lock system is actually which of the following?	Iron sulphide	Iron sulphate	Iron sulphite	Iron sulphide	Iron thiosulphate
55	The rate of burning of propellants depends upon which of the following factors?	Bullet pull-off	Whether the bullet is boat tailed or not	Bullet pull-off	Friction between bullet and cartridge case	Cannelure on bullet
56	After examination of evidence and test fired cartridge cases / bullets under the comparison microscope, the expert furnishes his opinion to the court. Which of the following opinions is not a suitable opinion?	The evidence cartridge cases / bullets could have been fired from the suspected firearm	The evidence cartridge cases / bullets have been fired from the suspected firearm	The evidence cartridge cases / bullets have been fired from the suspected firearm and could NOT have been fired from any other firearm	The evidence cartridge cases / bullets have NOT been fired from the suspected firearm	The evidence cartridge cases / bullets could have been fired from the suspected firearm
57	Which of the following firearms are a tip-up action firearms?	DBBL guns with top lever	Semi-automatic firearms	INSAS rifles	AK-47 rifles	DBBL guns with top lever
58	The earliest soft-point bullets which were made by grinding off the nose of jacket of .303 bullet were called:	Dum-dum bullet	Soft-nose belted bullet	Pencil-point bullet	Silver-tip bullet	Dum-dum bullet
59	Which of the following is the factor on which rate of burning of propellant does NOT depend?	Rate of fire of a firearm	Shape of powder chamber	Initial free space behind the bullet	Rate of fire of a firearm	Crimping of bullet with cartridge case
60	In rifles, the energy liberated by the burning of propellant is converted into various forms. In the case of 0.303 rifle, which of the following are major forms into which this energy gets converted?	Kinetic energy of bullet, heat energy lost to firearm and muzzle blast	Kinetic energy of bullet, kinetic energy of gases and muzzle blast	Kinetic energy of bullet, heat energy lost to firearm and muzzle blast	Kinetic energy of bullet, kinetic energy of gases prior to their exit and recoil of firearm	Kinetic energy of bullet, muzzle blast and energy used up in overcoming barrel friction

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61	When a high-velocity projectile moves in human body, there is formation of shock waves. Which of the following is approximately the velocity of shock waves inside human body?	4800 ft/sec	3500 ft/sec	4000 ft/sec	4800 ft/sec	5600 ft/sec
62	There is a threshold velocity of penetration of skin by a projectile $V(Th)$. Suppose a pistol bullet enters into human body, the loss of velocity suffered by it in passing through skin is?	Less than $V(Th)$	Equal to $V(Th)$	Greater than $V(Th)$	Greater than or equal to $V(Th)$	Less than $V(Th)$
63	As determined in wound ballistic studies, the energy, E , transferred by a high velocity projectile in passing through water or tissues to cause pulsations of temporary cavity and the time of cycle, say ' t ', are connected by which of the following relations?	t is proportional to $E^{(1/3)}$	t is proportional to $E^{(3)}$	t is proportional to $E^{(1/3)}$	t is proportional to $E^{(2)}$	t is proportional to $E^{(1/2)}$
64	When a high-velocity missile passes through a medium like water / gelatin gel, the diameter " D " of temporary cavity is proportional to the space rate of energy change. Which of the following is the CORRECT one?	" D " is proportional to (space rate of energy change) $^{(1/2)}$	" D " is proportional to (space rate of energy change) $^{(1/2)}$	" D " is proportional to (space rate of energy change) $^{(2)}$	" D " is proportional to (space rate of energy change) $^{(3)}$	" D " is proportional to (space rate of energy change) $^{(1/3)}$
65	For penetration of a projectile in human body, the concept of its energy density has been considered. Which of the following is normally considered to be the threshold value of this energy density?	0.167 Joules/mm 2	0.167 Joules/mm 2	0.167 Joules/cm 2	1.67 Joules/mm 2	16.7 Joules/mm 2
66	In experiments conducted by firing high-velocity projectiles in water, gelatin gel etc., let $V(TC)$ = volume of temporary cavity, $V(ZE)$ = volume of zone of extravasation, and $V(PC)$ = volume of permanent cavity. Which of the following is CORRECT observation in respect of these volumes?	$V(TC) \approx 27 V(PC)$ and $V(ZE) \approx 12 V(PC)$	$V(TC) \approx 27 V(PC)$ and $V(ZE) \approx 12 V(PC)$	$V(TC) = 27 V(ZE)$ and $V(ZE) = 12 V(PC)$	$V(TC) = 12 V(PC)$ and $V(ZE) = 27 V(PC)$	$V(TC) = V(ZE) = 27 V(PC)$
67	The bullet of 5.56 x 45 mm cartridge fired into human body suffers heavy retardation. Which of the following is the reason?	It is of light weight, has spitzer point and is fired at a velocity of about 3000 ft/sec	This bullet has round nose and is fired at a low velocity of about 1200 ft/sec	It is of light weight and is fired at a low velocity of about 1200 ft/sec	It is of light weight, has spitzer point and is fired at a velocity of about 3000 ft/sec	It is of lead and soon mushrooms
68	The 'balled shot' stands for which of the following?	When a shotgun cartridge loaded with pellets is fired from a loose barrel, some hot gases enter into the shot column, some pellets fuze and join together and this larger shot gets fired	Firing of one spherical ball	Usual firing of a charge consisting of many spherical shots	When a shotgun cartridge loaded with pellets is fired from a loose barrel, some hot gases enter into the shot column, some pellets fuze and join together and this larger shot gets fired	Firing of any cartridge loaded with single projectile
69	Photography of high-velocity bullets in flight, bullet velocity greater than velocity of sound in air, have shown that waves originate from the nose of bullet. The angle made by the waves at the nose of the projectile, is given by which of the following relations, (M is mach number of bullet in motion)?	$\arcsine(1/M)$	$\arcsine M$	$\arcsine(1/M)$	$\arcsine(1/2M)$	$\arcsine(1/3M)$
70	The estimation of maximum range of fired shots can be given by which of the following?	Range in yds = 2200 diameter of spherical shot in inches	Range in yds = 2200 diameter of spherical shot in cms	Range in yds = 2200 diameter of spherical shot in mm	Range in yds = 2200 diameter of spherical shot in inches	Range in yds = 2700 diameter of spherical shot in inches