AAH-003-001658 Seat No. _____

B. Sc. (Forensic Sci.) (Sem. VI) (CBCS) Examination

April/May - 2016

FS-602 : Ballistic & Explosive

Faculty Code : 003

Subject Code : 001658

Time : $2\frac{1}{2}$ Hours] [Total Marks : **70**

Instructions : (1) This question paper contains three questions. All are compulsory.

(2) Draw neat and labelled diagrams wherever necessary.

(3) Figures to the right indicate marks.

1 Questions-multiple choice : **20**

(1) Which component of firearm actuates the firing sequence of firearms?

(A) Hammer (B) Chamber

(C) Trigger (D) Magazine

(2) From following which are not the action characteristics of firearm?

(A) Lever action (B) Pump action

(C) Bolt action (D) Repeater action

(3) Walker test of GSR is done to detect the presence of

(A) Lead (B) Nitrite

(C) Sulphate (D) Iodine

(4) Which explosive is not nitro-aromatics explosive?

(A) TNT (B) PETN

(C) DNT (D) DNB

(5) The decomposition of the detonating explosives is initiated by _____

(A) Pressure (B) Shock wave

(C) Heat (D) Radiation

(6) What was used for igniting the gun powder in match lock firearm?

(A) Hammer (B) Hot metal rod

(C) Flint lock (D) Striking pin

(7) The Indian _____ Arms Act was enforced in

(A) 1955 (B) 1959

(C) 1961 (D) 1964

(8) Which is not contained in the triple base propellant?

(A) Nitrocellulose (B) Black powder

(C) Nitroglycerine (D) Mineral jelly

(9) The side way shift of the projectile from the plane of departure is called

(A) Drift (B) Jump

(C) Yaw (D) Recoil

(10) The diameter of shotgun chamber is

(A) Equal to the cartridge diameter

(B) Slightly more than cartridge diameter

(C) Equal to the bullet diameter

(D) Slightly less than the cartridge diameter

(11) Which component is used for shock absorber or compress to provide cushioning effect under pressure in shotgun cartridge?

(A) Pusan wad (B) Pellets

(C) Air cushion wad (D) All of the above

(12) Amatol means _____

(A) RDX + Ammonium Nitrate

(B) TNT + Barium nitrate

(C) TNT + Ammonium Nitrate

(D) RDX + Barium Nitrate

(13) The path travelled by projectile is called _____

(A) Recoil (B) Jumps,

(C) Trajectory (D) Yaw

(14) The hot gases are for _____ second in contact with barrel.

(A) 1 (B) 0.001

(C) 0.0001 (D) 0.01

(15) The use of fire arm started probably in _____ century.

(A) 14^{th} (B) 16^{th}

(C) 18^{th} (D) 20^{th}

(16) Who introduced dynamite?

(A) Lamount (B) Herin

(C) Willbrand (D) Alfred Nobel

(17) Which bullet is used to study the trajectories?

(A) Tracer bullet

(B) Stream lined bullet

(C) Incendiary bullet

(D) Boat-tailed bullet

(18) The content of potassium nitrate in the black powder is

(A) 70% (C) 72%

(B) 75% (D) 78%

(19) The lands and grooves of rifled firearm can vary in _____.

(A) Direction of twist (B) Twist angle

(C) Depth (D) All of the above

(20) Rifling of the barrel is responsible for the

(A) Spin of the bullet

(B) Stability of the bullet

(C) Increase the aim and accuracy

(D) All of the above

2 Give the answers of following questions as per instructions :

(a) Write any three out of six : **6**

(1) Define: bore and caliber

(2) Define: ballistic and forensic ballistic

(3) Composition of semi smokeless powder

(4) What is lock time and barrel time?

(5) Retardation due to air, depends upon what?

(6) List out the marks observed on fired cartridge.

(b) Write any three out of six : **9**

(1) Explain : match lock gun and wheel lock gun

(2) Classification of shot gun family

(3) Explain twist and pitch and why rifling is necessary?

(4) Types of cartridge case on the basis of the base configuration of cartridge case.

(5) Chamber and action block of shot gun.

(6) Composition of double base powder.

(c) Write any two out of five : **10**

(1) Explains the powder grains used as propellant charge.

(2) Write a note on BIDAS.

(3) Determination of range of fire on the basis of characteristics of entry wound of rifled firearm injury.

(4) Instrumental methods used for the analysis of GSR.

(5) Principle involved in the identification of firearms.

3 Give the answers of following questions as per instructions :

(a) Write any three out of six. **6**

(1) Parameters to be measured in BIDAS.

(2) Price spot test for the detection of GSR.

(3) Define: Ramroad and sear

(4) What is yaw and base drag?

(5) Define: trigger and trigger pull

(6) Composition of cordite and ballistite

(b) Write any three out of six : **9**

(1) Explain the types of bullets on the basis of heel shape.

(2) Explain heat problems observed during the study of internal ballistic.

(3) Types of spherical projectile and its manufacturing process.

(4) Wet methods for the collection of GSR.

(5) Harrison and Gilroy's test for the detection of GSR.

(6) Explain wads and lubricants.

(c) Write any two out of five : **10**

(1) Explain any five parts of shot gun fire arm.

(2) Explain the powder grains used as propellant charge.

(3) Write a note on barrel of rifled fire arm and techniques to introduce the rifling.

(4) Write a note on types of choking.

(5) Marks observed on fired cartridge case.
