BFI(CBRT)

PROVISIONAL ANSWER KEY

Name of the post	**Professor, Neuro Surgery, General State Service, Class-1**
Advertisement No.	**19/2023-24**
Preliminary Test held	**13-09-2023**
Question No.	**01-200**
Publish Date	**14-09-2023**

Last Date to Send Suggestion(s) 19-09-2023

THE LINK FOR ONLINE OBJECTION SYSTEM WILL START FROM 15-09-2023; 04:00 PM ONWARDS

Instructions / સૂચના

Candidate must ensure compliance to the instructions mentioned below, else objections shall not be considered: -

(1) All the suggestion should be submitted through **ONLINE OBJECTION SUBMISSION SYSTEM** only. Physical or submission through E- Mail of suggestions will not be considered.

(2) Question wise suggestion to be submitted in the prescribed format (proforma) published on the website / online objection submission system.

(3) All suggestions are to be submitted with reference to the Master Question Paper with provisional answer key (Master Question Paper), published herewith on the website / online objection submission system. Objections should be sent referring to the Question, Question No. & options of the Master Question Paper.

(4) Suggestions regarding question nos. and options other than provisional answer key (Master Question Paper) shall not be considered.

(5) Objections and answers suggested by the candidate should be in compliance with the responses given by him in his answer sheet. Objections shall not be considered, in case, if responses given in the answer sheet /response sheet and submitted suggestions are differed.

(6) Objection for each question should be made on separate sheet. Objection for more than one question in single sheet shall not be considered.

ઉમેદવારે નીચેની સૂચનાઓનું પાલન કરવાની તકેદારી રાખવી, અન્યથા વાંધા-સૂચન અંગે કરેલ રજૂઆતો ધ્યાને લેવાશે નહીં

(1) ઉમેદવારે વાંધા-સૂચનો ફક્ત **ઓનલાઈન ઓબ્જેક્શન સબમીશન** સીસ્ટમ દ્વારા જ સબમીટ કરવાના રહેશે. રૂબરૂ અથવા ટપાલ અથવા ઇ- મેઇલ દ્વારા આયોગની કચેરીએ મોકલવા આવેલ વાંધા-સૂચનો ધ્યાને લેવામા આવશે નહીં જેની ખાસ નોંધ લેવી.

(2) ઉમેદવારે વાંધા-સૂચનો રજૂ કરવા વેબસાઈટ / ઓનલાઈન ઓબ્જેક્શન સબમીશન સીસ્ટમ પર પ્રસિધ્ધ થયેલ નિયત નમૂનાનો જ ઉપયોગ કરવો.

(3) ઉમેદવારે પોતાને પરીક્ષામાં મળેલ પ્રશ્નપપુસ્તિકામાં છપાયેલ પ્રશ્નક્રમાક મુજબ વાંધા-સૂચનો રજૂ ન કરતા તમામ વાંધા-સૂચનો વેબસાઈટ પર પ્રસિધ્ધ થયેલ પ્રોવિઝનલ આન્સર કી (માસ્ટર પ્રશ્નપત્ર)ના પ્રશ્ન ક્રમાંક મુજબ અને તે સંદર્ભમાં રજૂ કરવા.

(4) માસ્ટર પ્રશ્નપત્રમાં નિર્દિષ્ટ પ્રશ્ન અને વિકલ્પ સિવાયના વાંધા-સૂચનો ધ્યાને લેવામાં આવશે નહીં.

(5) ઉમેદવારે પ્રશ્નના વિકલ્પ પર વાંધો રજૂ કરેલ છે અને વિકલ્પ રૂપે જે જવાબ સૂચવેલ છે એ જવાબ ઉમેદવારે પોતાની ઉત્તરવહીમાં આપેલ હોવો જોઈએ. ઉમેદવારે સૂચવેલ જવાબ અને ઉત્તરવહીનો જવાબ ભિન્ન હશે તો ઉમેદવારે રજૂ કરેલ વાંધા-સૂચનો ધ્યાનમા લેવાશે નહીં.

(6) એક પ્રશ્ન માટે એક જ વાંધા-સૂચન પત્રક વાપરવું. એક જ વાંધા-સૂચનો પત્રકમાં એકથી વધારે પ્રશ્નોની રજૂઆત કરેલ હશે તો તે અંગેના વાંધા-સૂચનો ધ્યાને લેવાશે નહીં.

Website link for online objection submission system : http://gpsc.safevaults.in/login/

001. Which among the following artery is persistent embryonic carotid - vertebrobasilar anastomoses?

(A) Posterior Communicating Artery **(B) Fetal Posterior Cerebral Artery**

(C) Proatlantal intersegmental Artery **(D) Persistent Stapedial Artery**

002. 15 year old patient presented with headache and history of multiple episodes of seizures since childhood with low scholastic performance (features of mental retardation). On examination, multiple small papular facial nevi were seen. Which among the following finding is not to be seen on MR studies?

(A) Cortical tubers

(B) Benign White matter lesions

(C) Subependymal nodules

(D) Cortical atrophy with dystrophic calcification

003. All are the possible explanation for pupillary dilation on the side of mass lesion except:

(A) Compression of unilateral hypothalamus due to mass lesion

(B) Compression of the third cranial nerve by uncal herniation beneath the tentorial edge

(C) Compression of the midbrain oculomotor complex

(D) Compression of the third nerve by the posterior cerebral artery or by the hippocampal gyrus.

004. Which of the following option related to clinical features of intramedullary and extramedullary tumours is correct?

Statement A- Intramedullary tumours present with funicular pain. Early upper motor neuron signs, prominent and diffuse lower motor signs. Ascending paraesthesia progression and trophic changes are seen commonly.

Statement B- extramedullary tumours may present with early radicular pain. Prominent upper motor neuron signs, segmental distribution of lower motor neuron signs if present. Late sphincter abnormalities

(A) Both statements are correct

(B) Statement A is correct and statement B is incorrect

(C) Statement A is incorrect and Statement B is correct

(D) Both statements are incorrect.

005. Following are the prerequisites for performing apnoea procedure except:

(A) Normotension (Systolic Blood Pressure ≥ 100 mm Hg)

(B) $PaCO_2$ 30-35 mm Hg

(C) Euvolemia

(D) Normal or near normal core temperature (>36°)

006. Which of the following statement related to central sensorimotor pathways concerned with micturition and sphincter control is incorrect?

(A) Cerebral control of micturition is located in the anterior aspect of cingulate gyrus, genu of corpus callosum and dorsolateral portion of frontal lobe

(B) Most afferent fibres (conveying the sensation of bladder fullness) ascend to synapse on the relay cells located in the dorsal ponto-mesencephalic reticular formation micturition centre.

(C) Subcortical micturition centre has contributions from thalamic nuclei, red nucleus, hypothalamus and subthalamic nucleus.

(D) Urethral reflex loop, Detrusor loop, Cord loop and Cerebral loop and corticospinal pathway form the basis of process of micturition.

007. Following are included in the diagnostic criteria for Neurofibromatosis type 1 except:

(A) Café au lait spots **(B) Iris hamartomas**

(C) Shagreen patches **(D) Optic nerve glioma**

008. Which is the incorrect match in the following examination?

Examination - Procedure

(A) Pronator drift - Patient's upper extremities are outstretched to the front, palms up and with the eyes closed. Patient should hold this position for at least 20 to 30 seconds. Pronation of the hand and slight flexion of the elbow on the abnormal side is seen.

(B) Cerebellar drift - Patient's upper extremities are outstretched to the front, palms up and with the eyes closed. Patient should hold this position for at least 20 to 30 s. Involved arm and forearm movement is downwards and outwards

(C) Parietal drift - Patient's upper extremities are outstretched to the front, palms up and with the eyes closed. Patient should hold this position for at least 20 to 30 s. Involved arm and forearm movement is upwards

(D) Rotator drift - With the patient supine, the examiner grasps both big toes, pointing them towards the ceiling with the long axis of the foot perpendicular to the bed; the patient is asked to maintain this position for 30 s. People with pyramidal tract weakness show external rotator drift on their weak side: on the normal side the foot is deviated 20-25° from the perpendicular, on the paretic side the foot is deviated more than 30°.

009. Which of the following match is correct?

Muscle	Segmental innervation	Peripheral nerve
(A) Abductor Pollicis brevis	**C8-T1**	**Median nerve**
(B) Brachialis	**C5-C6**	**Radial nerve**
(C) Pronator teres	**C6-C7**	**Radial nerve**
(D) Rhomboideus Major	**C5-C7**	**Long thoracic nerve**

010. Which of the following statement is incorrect?

(A) Taylor Haughton (T-H) lines can be constructed on an angiogram, CT/MRI scout film, or skull x-rays

(B) Frankfurt plane is the line drawn from the inferior margin of the orbit through the upper margin of the external auditory meatus

(C) Reid'sbase line buses from the inferior orbital margin through the lower margin of the external auditory meatus.

(D) T-H lines can then be used to approximate the sylvian fissure and the motor cortex.

011. Chater's point is related to the following cerebral anatomy

(A) Central sulcus **(B) Sylvian fissure**

(C) Post central sulcus **(D) Pre central sulcus**

012. Which of the following features of Broca's aphasia is incorrect?

(A) Intact comprehension **(B) Impaired naming**

(C) Literal &phonemic paraphasic errors **(D) Impaired repetition**

013. Which of the following option related to external landmarks to locate the central sulcus is correct?

Statement A – Using T-H lines, in the central sulcus is approximated by connecting the point where the "posterior ear line" intersects the circumference of the skull (which is usually about 1 cm behind the vertex, and 3–4 cm behind the coronal suture), to the point where the "condylar line" intersects the lines of presenting the sylvianfissure.

Statement B- the central sulcus is approximated by connecting the point 2 cm posterior to the mid position of the arc extending from nasion to inion and the point 5 cm straight up from the external auditory meatus.

(A) Both statement are incorrect

(B) Both statement are correct

(C) Statement A is correct, Statement B is incorrect

(D) Statement B is correct, Statement A is incorrect

014. Following neoplastic lesions are seen on MRI studies of Neurofibromatosis type 2 patients except:

(A) Acoustic schwannoma- Bilateral **(B) Meningioma**

(C) Ependymoma **(D) Haemangioblastoma**

015. Onuf nucleus is related to

(A) Cervical spinal cord **(B) Thoracic spinal cord**

(C) Lumbar spinal cord **(D) Sacral spinal cord**

016. Following is not an associated sign of Gerstmann Syndrome.

(A) Right- Left disorientation **(B) Dressing apraxia**

(C) Agraphia **(D) Finger agnosia**

017. Which of the following option is correct?

Statement A- Medial Geniculate Body transmits auditory information from the inferior colliculus to the transverse temporal gyrus

Statement B – Lateral Geniculate body is relay station for visual pathway, which receives from retinal ganglion cells the axons that form the optic tract and project to the calcarine cortex through the optic radiations.

(A) Both statements are true

(B) Statement A is true, Statement B is false

(C) Statement B is true, Statement A is false

(D) Both statements are false

018. McConell's artery supplies

(A) Capsule of pituitary gland **(B) Hypothalamus**

(C) Pulvinar of thalamus **(D) Tentorial dura**

019. Which of the following match related to entrapment neuropathy is incorrect?

Nerve	Main site of compression
(A) Tibial	**Fibular head**
(B) Ulnar	**Guyon's canal**
(C) Radial	**Spiral groove**
(D) Median	**Pronator teres**

020. Which of the following CT findings in early acute ischemic stroke is incorrect?

(A) Loss of gray white matter differentiation

(B) Blurring/indistinctness of the basal ganglia

(C) Loss of insular cortex

(D) Hypodense vessel.

021. Which of the following options is correct?

Statement A - Inverted reflexes result from combined spinal cord and root pathology

Statement B - when biceps tendon is tapped and there is no biceps jerk but the triceps contract this is called inverted biceps reflex.

Statement C - When the brachioradialis tendon is percussed and the brachioradialis reflex is depressed or absent while a brisk finger flexor response is elicited it is called inverted radial reflex.

(A) All three statements are wrong

(B) Statement A is correct, statement B & C is wrong

(C) Statement A & C are correct, statement B is wrong

(D) All three statements are correct

022. Patient comes into the clinic complaining of back pain with radiation down the lateral aspect of the thigh and anterior aspect of the leg to the dorsum of the foot. On sensory examination, diminished pinprick sensation in the web space between the big toe and second toe is noticed. You would localise it to which root?

(A) L5 **(B) L4**

(C) S1 **(D) L3**

023. Which of the clinical findings pertaining to upper motor neuron lesion of cervical spinal cord is incorrect?

(A) Hypertonia, hyperreflexia, flexor spasm, extensor plantar reflex

(B) Clonus, extensor spasm, absent superficial reflexes, impaired dexterity

(C) Spastic gait, hyporeflexia, contractures, proximal weakness

(D) Exaggerated deep tendon reflexes, flexor spasms with bladder & occasional faecal incontinence, muscle deformity

024. FABER Test is used to evaluate pathology of-

(A) Knee pathology **(B) Hip pathology**

(C) Lumbar spine pathology **(D) Hip and sacroiliac joint pathology**

025. Near reflex comprises of

(A) Pupillary dilation, divergence

(B) Pupillary escape, convergence

(C) Pupillary constriction, convergence, accommodation

(D) Pupillary dilation, divergence, accommodation

026. Normal Kestenbaum index is

(A) 9-10 **(B) 4-5**

(C) 2-3 **(D) 10-15**

027. Who developed Bipolar coagulation using fine tip jeweler's forceps?

(A) Leonard Malis **(B) Thierry de Martel**

(C) William T Bovie **(D) Jean AthanaseSicard**

028. **Contralateral Congruous homonymous hemianopia visual field defect occurs due to lesion of following location of visual pathway**

(A) Optic tract **(B) Lateral Geniculate Body**

(C) Calcarine cortex **(D) Distal optic nerve**

029. **Who developed first Gamma Knife in 1967 for treatment of trigeminal neuralgia**

(A) Peter Jannetta **(B) Speigel&Wycis**

(C) Lars Leksell **(D) Theodore Kurze**

030. **Lhermitte's symptom indicates a lesion of**

(A) Motor column (Corticospinal Tract) **(B) Dorsal column**

(C) Sensory column (Spinothalamic tract) **(D) Medial Lemniscus**

031. **Which of the following options is correct?**

Statement A- Neurogenic Claudication- exertional pain is usually at thigh and buttock, Exercise tolerance is variable and weakness is often present after exercise. Sitting and leaning forward brings relief while standing and back hyper extension reproduces symptoms. Walking down on incline worsens the symptoms.

Statement B- Vascular Claudication- exertional pain is usually at calf, exercise tolerance is constant and there is no weakness after exercise. Riding bicycle reproduces the symptoms. Walking up on the incline worsens the symptoms.

(A) Both statements are correct

(B) Statement A is correct and statement B is incorrect

(C) Statement A is incorrect and Statement B is correct

(D) Both statements are incorrect

032. **Lesion at medullocervical junction causes "hemiplegia cruciata" that presents with-**

(A) Contralateral upper extremity paresis and ipsilateral lower extremity paresis

(B) Ipsilateral upper extremity paresis and ipsilateral lower extremity paresis

(C) Contralateral lower extremity paresis and ipsilateral upper extremity paresis

(D) Ipsilateral upper extremity paresis and contralateral lower extremity paresis

033. **Which of the following statement about artery of Adamkiewicz is incorrect?**

(A) It is the main arterial supply for the spinal cord from T10 to conus

(B) Usually fairly large, gives off cephalic and caudal branch giving a characteristic hairpin appearance on angiography.

(C) Situated between T9 & L2 in 85%.

(D) Located on the right in 80%.

034. **Which of the following statement is incorrect?**

(A) Superior petrosal sinus terminates at sigmoid sinus within 1 cm of the junction of sigmoid and transverse sinuses.

(B) Right transverse sinus is dominant in 65%

(C) Vein of Trolard drains into transverse sinus and is prominent on the dominant side.

(D) Internal cerebral vein is formed by joining of anterior septal vein and thalamostriate vein.

035. Which of the following match related to the root affected by the disc protrusion is incorrect?

Lumbosacral disc protrusion	Root affected
(A) L4-5 Far lateral disc	L4
(B) C4-5 disc	C5
(C) L5-S1 Postero lateral disc	L5
(D) C6-7 disc	C7

036. Who performed the first removal of a spinal cord tumor that has been diagnosed and localized by William R. Gowers?

(A) Charles Elsberg (B) Victor Horsley
(C) William Keen (D) Harvey Cushing

037. Which of the following is not a frontal release sign/reflex

(A) Palmomental reflex (B) Glabellar reflex
(C) Orbicularis oris reflex (D) Snout reflex

038. Neurosurgeon who was trained under Harvey Cushing and developed technique of pneumoencephalography. Who is he?

(A) Walter Dandy (B) Charles H Frazier
(C) Egas Moniz (D) William Halstead

039. Clonus can be elicited at the following sites except-

(A) Patella (B) Wrist
(C) Jaw (D) Elbow

040. Who performed removal of a brain tumor, first to be successfully diagnosed by cerebral localisation in 1885?

(A) Sir Rickman J Godlee (B) Sir Jonathan Hutchinson
(C) Sir William Macewen (D) Dr Harvey William Cushing

041. Which of the following match related to brachial plexus anatomy is incorrect?

Site of origin	Major branches
(A) Spinal Roots	Long Thoracic Nerve
(B) Trunk	Dorsal scapular Nerve
(C) Division	Pectoral Nerves
(D) Posterior Cord	Radial Nerve

042. While assessing a patient after a stroke, your exam identifies a pure conductive aphasia. Which structure has been damaged?

(A) Arcuate fasciculus (B) Broca's area
(C) Wernicke's area (D) Primary motor cortex

043. You have been following a patient with epilepsy. Her seizure semiology consists of olfactory hallucinations followed by behavioural arrest, lip smacking and left upper extremity shaking. You offer surgical resection for attempted cure. What deficit is possible in this case if resection is carried too far posterior?

(A) Right hemiplegia (B) Left hemiplegia
(C) Left superior quadrantanopsia (D) Left inferior quadrantanopsia

044. **While exposing the posterior fossa via an extended retro sigmoid craniotomy for a brainstem tumor, you decide to divide the tentorium to increase your superior access. This can inadvertently injure a nerve and cause deficit. What deficit is the patient likely to experience?**

(A) Lateral rectus palsy **(B) Medial rectus palsy**

(C) Superior oblique palsy **(D) Monocular visual loss**

045. **While evaluating a patient for brain death, you use a small amount of irrigation to the cornea to look for a blink. What brainstem structure mediates this reflex?**

(A) Spinal trigeminal nucleus **(B) Oculomotor nucleus**

(C) Superior olive **(D) Abducens nucleus**

046. **You are evaluating a 50-year-old man who has a herniated cervical disc on the right at C5-6, where would you expect him to have sensory loss on exam?**

(A) Right shoulder **(B) Right thumb**

(C) Right third finger **(D) Right 5th finger**

047. **You are evaluating a 50-year-old man who has been found to have spinal osteomyelitis as a complication from ongoing pelvic infection. Which structure is theorized to allow spread of pelvic infections to the spine?**

(A) Lumbar nerve roots **(B) Batson's plexus**

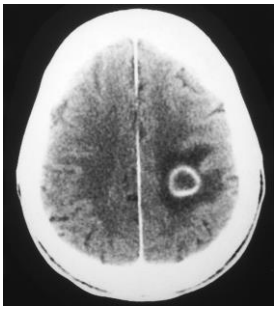
(C) Thoracic duct **(D) Artery of Adamkiewicz**

048. **You are evaluating an overweight police officer who has started to note the onset of patchy sensory loss and pain over the anterolateral right thigh. What nerve is affected in this classic condition?**

(A) Ilioinguinal nerve **(B) Lateral femoral cutaneous nerve**

(C) Iliohypogastric nerve **(D) Genitofemoral nerve**

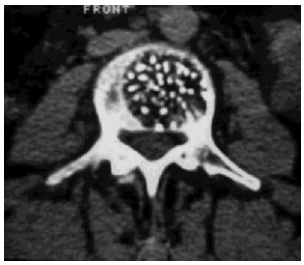
049. **You are evaluating a 35-year-old homeless man who reports intravenous (IV) drug use who has developed persistent headaches. An abnormality is seen on CT; findings are shown below. What is the most likely diagnosis?**



(A) Metastasis **(B) Cerebral abscess**

(C) Glioblastoma **(D) Meningioma**

050. A 33-year-old woman had a spine CT after she experienced pain over back following a minor trauma. The axial slice through T10 is shown below. What is the most likely diagnosis?



(A) Haemangioma **(B) Burst fracture**

(C) Metastatic lesion **(D) Osteoid osteoma**

051. What leads to reduction in ICP by hyperventilation of the intubated patient with elevated ICP?

(A) Decreased pH **(B) Increased pH**

(C) Increased CSF production **(D) Decreased CSF production**

052. Which of the following is false of seizure foci?

(A) Epileptic foci are slower in binding and removing acetylcholine than normal cortex.

(B) Firing of neurons in the focus is reflected by periodic spike discharges in the Electroencephalogram (EEG).

(C) If unchecked, cortical excitation may spread to the subcortical nuclei.

(D) The change in seizure discharge from the tonic phase to the clonic phase results from inhibition from the neurons surrounding the focus.

053. An abnormal optokinetic response is more likely to be obtained by rotating the optokinetic nystagmus drum

(A) Away from an occipital lobe lesion **(B) Away from a parietal lobe lesion**

(C) Toward an occipital lobe lesion **(D) Toward a parietal lobe lesion**

054. Which of the following drugs is least effective in the treatment of trigeminal neuralgia?

(A) Baclofen **(B) Carbamazepine**

(C) Phenytoin **(D) Ketorolac**

055. Which of the following is true of papilledema?

(A) Absence of venous pulsations is a reliable indicator of papilledema.

(B) Pupillary light reflexes remain normal.

(C) The congested capillaries derive from the central retinal vein.

(D) Visual acuity usually decreases.

056. According to Code of Medical Ethics Regulations, 2002 Medical records pertaining to indoor patients are to be maintained for a period of _____ years from date of commencement of treatment?

(A) 3 years **(B) 5 years**

(C) 7 years **(D) 10 years**

057. Which is the false statement in context to "valid informed consent" obtained for Neurosurgery?

(A) Consent should be obtained from patient, spouse, parents or adult children.

(B) Composition of ideal consent form includes site & side of surgery.

(C) Implied consent is better than Informed consent.

(D) Informed consent should provide information to patient about alternative treatment options.

058. Who performed the first Endoscopic Third Ventriculostomy?

(A) Walter Dandy **(B) William Jason Mixter**

(C) Victor de L'Espinasse **(D) Tracy Putnam**

059. A 34-year-old woman with a history of medically intractable epilepsy currently failing two AEDs has been admitted to the epilepsy monitoring unit for seizure classification. On the video monitor, you observe her having a seizure. On the video, before her seizure begins, she reports a rising feeling in her epigastric region, as well as the smell of burnt rubber. She begins seizing, and after 15 seconds, the semiology appears to change, and she adopts the classic fencer's posture, with her contralateral arm abducted, externally rotated, and flexed at the elbow. What white matter tract did the seizure propagate along?

(A) Corpus callosum **(B) Uncinate fasciculus**

(C) Fronto-occipital fasciculus **(D) Fasciculus retroflexus**

060. Which of the following is true of tuberculous meningitis?

(A) Headache is usually absent.

(B) If untreated, the clinical course is self-limited.

(C) The inflammatory exudate is found mainly at the convexities.

(D) The protein content of the cerebrospinal fluid (CSF) is almost always elevated

061. Which of the following tumour has the highest propensity of all systemic tumours to metastasize to the brain?

(A) Small cell lung cancer **(B) Breast cancer**

(C) Melanoma **(D) Renal cell cancer**

062. ASSERTION — (A) Metastasis larger than 3cms in diameter should be treated with surgery

REASON — (R) Stereotactic radiosurgery is ineffective for single brain metastasis larger 3cms because the radiation dose must be decreased as tumour size increases to avoid injury to the surrounding brain.

(A) Both A and R are correct and R is the correct explanation of A

(B) Both A and R are correct but R is not the correct explanation of A

(C) A is correct but R is false

(D) A is false but R is correct

063. Membranous bones of the skull and the three meningeal layers of brain develop from

(A) Ectoderm

(B) Mesoderm

(C) Endoderm

(D) Skull bones from ectoderm & meninges from endoderm

064. All of the clinico radiological features suggest a diagnosis of Dandy Walker Syndrome except

(A) Presence of hydrocephalus in all cases

(B) Absence or flattening of the angle of fastigium

(C) Absence of a portion of inferior vermis

(D) Hypoplasia, anterior rotation and upward displacement of the remaining vermis

065. The term craniophagus was coined by

(A) Forster **(B) O'connell**

(C) Stone & Goodrich **(D) Bucholz**

066. **Which Antitubercular drug is used to prepare antibiotic impregnated shunts by Codman?**

(A) Streptomycin **(B) Rifampicin**

(C) Isoniazid **(D) Ethambutol**

067. **Cerebral edema produced by Trans-ependymal flow of CSF in patients with hydrocephalus is -**

(A) Cytotoxic edema **(B) Vasogenic edema**

(C) Osmotic edema **(D) Interstitial edema**

068. **All of the following substances may diffuse freely through the lipid membranes that constitute the blood brain barrier except-**

(A) Oxygen **(B) Carbon dioxide**

(C) Water **(D) Ethanol**

069. **ASSERTION — (A) The pathogenesis of Multiple Sclerosis is dependent on extravasation of leucocyte through the blood brain barrier and into the parenchyma.**

REASON — (R) Therapeutics of Multiple Sclerosis is targeted at increasing blood brain barrier integrity

(A) Both A & R are correct & R is the correct explanation of A

(B) Both A & R are correct & R is not the correct explanation of A

(C) A is correct but R is false

(D) A is false but R is correct

070. **ASSERTION — (A) In diabetic patients treatment with Insulin is often required to maintain euglycemia during preoperative & perioperative period.**

REASON — (R) Sulfonylureas & Metformin should not be used during 24 to 48 hours before surgery because of their long half-lives.

(A) Both A & R are correct & R is the correct explanation of A

(B) Both A & R are correct & R is not the correct explanation of A

(C) A is correct but R is false

(D) A is false but R is correct

071. **Gold standard diagnostic modality for pulmonary embolism is**

(A) Clinical suspicion along with arterial blood gas analysis

(B) Clinical suspicion along with x ray chest

(C) CT Thorax

(D) Pulmonary angiography

072. **Gold standard method of diagnosing seizures and non-epileptic spells is**

(A) Magnetic resonance imaging

(B) Positron emission tomography

(C) Single photon emission computed tomography

(D) Video EEG

073. **Which of the following imaging techniques utilises blood oxygen level dependent signal for localisation?**

(A) Diffusion weighted tractography **(B) Positron emission tomography**

(C) Single photon emission tomography **(D) Functional magnetic resonance imaging**

074. **Which of the following investigation is considered gold standard for the diagnosis of Dural arteriovenous fistula?**

(A) CT Angiography **(B) 3 vessel DSA**

(C) 4 vessel DSA **(D) 6 vessel DSA**

075. **ASSERTION — (A) In brain abscess capsule formation & ring enhancement are generally thinner & less complete on the ventricular side of the abscess**

REASON — (R) It is probably due to more vascular supply & more migration of the fibroblasts into the area

(A) Both A & R are correct & R is the correct explanation of A

(B) Both A& R are correct but R is not the correct explanation of A

(C) A is true but R is false

(D) Both A & R are false

076. **Which of the following organism is not a fungi but fungi like bacteria?**

(A) Candida **(B) Mucor**

(C) Actinomyces **(D) Rhizopus**

077. **A patient is suffering from tubercular basal meningitis with hydrocephalus. He has a GCS of 11 along with neurological deficit. What grade in Modified Vellore Grading of TBM with hydrocephalus will this patient be categorized into?**

(A) Grade IV **(B) Grade III**

(C) Grade II **(D) Grade I**

078. **Which of the following seizure type is the primary indication for corpus callosotomy and also responds better as compared to other types of seizure?**

(A) Drop attacks (both tonic & clonic) **(B) Partial seizure**

(C) Absence seizure **(D) Myoclonic seizure**

079. **All of the following are the radiological features of Dandy- walker malformation except:**

(A) Hydrocephalus

(B) Small posterior fossa with vermian hypoplasia

(C) Lambdoid -torcular inversion

(D) Large posterior fossa

080. **Beevor sign is positive for which level of spinal cord lesion?**

(A) T10 **(B) T6**

(C) T8 **(D) T12**

081. **Which of the following match related to angiographic findings of vascular malformation is not true?**

Vascular Malformation	Angiography findings
(A) Parenchymal AVMs	**Enlarged arteries & veins. A V Shunting. Early draining veins**
(B) Venous angioma	**"Medusa head" of enlarged medullary veins. Arterial phase normal, Enlarge transcortical or subependymal draining vein**
(C) Vein of Galen malformation	**Aneurysmal enlargement of Vein of Galen, Enlarged Choroidal/Thalamoperforating Arteries**
(D) Cavernous angioma	**Often normal, Racemose type may show faint blush**

082. **Which of the following is not a superficial reflex?**

(A) Scapular reflex **(B) Cremasteric reflex**

(C) Gluteal reflex **(D) Peroneal reflex**

083. **Which of the following is NOT a part of Papez circuit?**

(A) Ventromedial and Posterior Thalamus **(B) Hippocampus**

(C) Mammillary bodies **(D) Cingulate gyrus**

084. Which of the following match is incorrect?

Reflex	Segmental level	Peripheral nerve
(A) Biceps	C5-C6	Musculocutaneous
(B) Triceps	C7-C8	Median
(C) Quadriceps	L3-L4	Femoral
(D) Achilles	S1	Sciatic

085. Who was the first neurosurgeon to use a microscope during surgery?

(A) Paul Harrington (B) Theodore Kurze
(C) MG Yasargil (D) Julius Jacobson

086. Artery of Percheron is a rare anatomic variant arising from

(A) Ambient segment of Posterior cerebral artery
(B) Peduncular segment of Posterior cerebral artery
(C) Quadrigeminal segment of Posterior cerebral artery
(D) Posterior communicating artery

087. Who is popularly known as "Father of Neurosurgery"?

(A) MG Yasargil (B) Walter Dandy
(C) Harvey Cushing (D) Victor Horsley

088. Primary Auditory areas on Broadmann's map lies on

(A) Area 49, 50 (B) Area 41, 42
(C) Area 44, 45 (D) Area 40, 39

089. Descending laterally across the posterior skull, which suture marks the border between the occipital and parietal bones?

(A) Squamosal (B) Coronal
(C) Lambdoid (D) Sphenosquamosal

090. You are evaluating a patient with cramping of the hand that is better when he shakes the hand, thenar atrophy, and sensory disturbances in the first three digits and the lateral aspect of the 4th. Which structure is causing the nerve compression?

(A) Volar carpal ligament (B) Transverse carpal ligament
(C) Ligament of Struthers (D) Arcade of Frohse

091. You are evaluating a patient who clearly has dysfunction of the gluteus maximus. Which nerve innervates the gluteus maximus?

(A) Superficial gluteal (B) Superior gluteal
(C) Inferior gluteal (D) Obturator

092. What signal intensity on T1-weighted imaging does hyperacute (< 24) haemorrhage demonstrates?

(A) Isointense (B) Hyperintense
(C) Hypointense (D) Hyperdense

093. Early post-operative complications in Neuroendoscopy are all except?

(A) Delayed awakening (B) Fever
(C) Subdural collection (D) Stoma closure

094. When evaluating patients with gunshot wounds to the head, bullet trajectory is important for prognostication. What trajectory has been found to be uniformly fatal in the civilian population?

(A) Bifrontal trajectory (B) Holohemispheric trajectory

(C) Biventricular trajectory (D) Transverse cerebellar trajectory

095. All of the following factors in large RTOG group have been identified and associated with improved survival except

(A) Karnofsky performance status score more than 70 or more

(B) A known primary source

(C) Age less than 60 years

(D) Metastatic spread limited to the brain

096. Which one of the following is a non-neuronal cell type in the central nervous system?

(A) Neurons (B) Neuroglia

(C) Oligodendrocyte (D) Astrocyte

097. Which Scientist's brain was divided into two parts and kept in two different museums in London after his death?

(A) Charles Babbage (B) Wilhelm Rontgen

(C) Sir Godfrey Hounsfield (D) Egas Moniz

098. Which other neuroscientist apart from Juhn Wada developed Wada test for the assessment of language dominance?

(A) Carl Wernicke (B) Paul Broca

(C) Fedor Krause (D) Theodore Rasmussen

099. Which of the following laboratory test is currently considered Gold standard to assess antiplatelet effect in patients receiving antiplatelet therapy?

(A) Light transmission (optical) aggregometry from whole blood

(B) Bleeding time measurement

(C) Platelet function analyser (PFA-100)

(D) Verify Now rapid platelet function assay

100. Which of the following antitubercular drug is contraindicated during pregnancy?

(A) Isoniazid (B) Pyrazinamide

(C) Ethambutol (D) Streptomycin

101. "Ω" sign on the lateral surface of cerebral hemisphere denotes

(A) Leg area of motor strip (B) Hand area of motor strip

(C) Angular gyrus (D) Frontal eye field

102. Which part of internal capsule is lateral to foramen Monro

(A) Anterior limb of internal capsule (B) Posterior limb of internal capsule

(C) Sublentiform part of internal capsule (D) Genu of internal capsule

103. True about prosencephalon is all except

(A) Also known as Forebrain

(B) Divides into telencephalon and diencephalon

(C) Thalamus is derived from prosencephalon

(D) Prosencephalon is in continuation with rhombencephalon

104. Upper limit of normal ICP in adult is

(A) 5 mm Hg (B) 10 mm Hg

(C) 15 mm Hg (D) 20 mm Hg

105. After choroid plexus, next most common site of CSF production is

(A) Arachnoid villi (B) Ventricular ependyma

(C) Venous sinuses (D) Intraventricular blood vessels

106. Ipsilateral pupillary dilation, contra lateral hemi paresis is a sign of

(A) Raised intracranial pressure (B) Subfalcine herniation

(C) Tonsillar herniation (D) Temporal herniation

107. Which of the following is not used in patients of raised intracranial pressure (ICP)

(A) Hypertonic fluids (B) Hypotonic fluids

(C) Osmotic agents (D) Acetazolamide

108. In an intervertebral disc nerve fibres are identified in

(A) Nucleus pulposus

(B) Inner layer of annulus fibrosus

(C) Outer layer of annulus fibrosus

(D) Not found in any part of intervertebral disc

109. Most common location of Primary CNS Lymphoma is

(A) Periventricular (B) Posterior fossa

(C) Intramedullary (D) Subdural

110. True about Lipomeningomyelocoele

(A) Post neurulation defect

(B) Strongly associated with chiari malformation

(C) Primary neurulation defect

(D) Always present with hydrocephalus

111. Odontoid gets fully ossified by

(A) 8 yrs (B) 10 yrs

(C) 5 yrs (D) 12 yrs

112. Space occupied by CSF in intracranial cavity is

(A) 6% (B) 9%

(C) 15% (D) 20%

113. Gerstmann's syndrome classically involves a lesion in the

(A) Dominant frontal lobe (B) Dominant parietal lobe

(C) Dominant temporal lobe (D) Nondominant parietal lobe

114. Hadad-Bassagasteguy nasoseptal flap in the repair of sellar floor is a vascular flap based on

(A) Posterior septal artery (B) Posterior palatine artery

(C) Posterior sphenopalatine artery (D) Posterior ethmoidal artery

115. Craniospinal irradiation is employed in the treatment of

(A) Mixed oligoastrocytoma (B) Medulloblastoma

(C) Oligodendroglioma (D) Pilocytic astrocytoma

116. True about central neurocytoma is all except

(A) Predominantly in young adults

(B) Prototypically occurs in the lateral and third ventricles

(C) It is a high-grade tumor

(D) Intratumoral calcifications are commonly identified on CT

117. Chang staging is used for

(A) Ependymoma **(B) Medulloblastoma**

(C) Pilocytic astrocytoma **(D) Hemangioblastoma**

118. Cherry red spot / pinkish orange spot in the third ventricular floor is

(A) Mammillary bodies **(B) Dorsum sella**

(C) Lamina terminalis **(D) Infudibular recess**

119. Transient memory disturbance following ETV is due to traction of?

(A) Thalamus **(B) Corpus callosum**

(C) Fornix **(D) Infundibular recess**

120. Thalamostriate vein is:

(A) Lateral to foramen of monro **(B) Medial to foramen of monro**

(C) Superior to foramen of monro **(D) Not related to foramen of monro**

121. Most common location of germinal matrix in developing brain is

(A) Cerebellar Vermis **(B) Subependyma of the ventricular walls**

(C) Sub cortical area of cerebral cortex **(D) Cervico medullary junction**

122. Pineal gland is supplies by which branches

(A) Medial posterior choroidal artery

(B) Lateral posterior choroidal artery

(C) Both Medial and Lateral posterior choroidal artery

(D) Anterior choroidal artery

123. Which is not a content of quadrigeminal cistern

(A) Vein of galen **(B) Basal vein**

(C) Pineal gland **(D) PCA**

124. X-ray beam is used in

(A) Gamma Knife **(B) Cyber Knife**

(C) Proton Radiosurgery **(D) All of the above**

125. Radiation tolerance limit for brainstem is

(A) 12Gy **(B) 22Gy**

(C) 32Gy **(D) 42Gy**

126. Which of the following is also known as Dandy's vein

(A) Inferior petrosal vein **(B) Superior petrosal vein**

(C) Lateral medullary vein **(D) Inferior medullary vein**

127. 4^{th} ventricle choroid plexus blood supply is from

(A) PICA **(B) AICA**

(C) Posterior cerebral artery **(D) Anterior spinal artery**

128. Cardinal feature (triad) of Parkinson disease include:

(A) Bradykinesia, tremor at motion, and muscular rigidity

(B) Bradykinesia, tremor at rest, and muscular rigidity

(C) Bradykinesia, tremor at rest, and muscular spasticity

(D) Bradykinesia, tremor at motion, and muscular spasticity

129. Chorea is:

(A) Nonrhythmic, rapid, involuntary movements

(B) Rhythmic, rapid, involuntary movements

(C) Nonrhythmic, slow, involuntary movements

(D) Rhythmic, slow, involuntary movements

130. True about Tremors is all except:

(A) Physiologic tremor generally has frequency of 8 to 12 Hz.

(B) Pill-rolling tremors is classically seen in Parkinson disease

(C) Cerebellar tremor characterized by jerky, high-frequency low amplitude action tremor.

(D) Essential tremors involve upper limbs more than lower limbs

131. The best statement regarding an ablative procedure in Parkinson disease is

(A) Wider availability, lower cost, immediate benefit, modifiable and reversible

(B) Wider availability, lower cost, immediate benefit, nonmodifiable and irreversible

(C) Wider availability, lower cost, delay benefit, nonmodifiable and irreversible

(D) Wider availability, lower cost, delay benefit, modifiable and irreversible

132. Deep Brain Stimulus likely to improves all symptoms of Parkinson except

(A) Rigidity **(B) Tremors**

(C) Autonomic functions **(D) Dyskinesia**

133. True about optic pathway hypothalamic glioma is

(A) Majority are high grade glioma

(B) Majority are low grade glioma

(C) They are more common in middle age group

(D) They are more common in Japanese population

134. Main Input structure of basal ganglia is:

(A) Substantia Nigra pars compacta (SNc)

(B) Internal segment of globus pallidus (GPi)

(C) Striatum

(D) Substantia Nigra pars reticulata (SNr)

135. Factor most closely associated with recurrence of craniopharyngioma is

(A) Extent of resection at initial surgery **(B) No adjuvant radiotherapy**

(C) Lack of postoperative chemotherapy **(D) Age of patient**

136. Classic fried egg appearance in histopathology commonly associated with

(A) Medulloblastoma **(B) Glioblastomamultiforme**

(C) Acoustic schwannoma **(D) Oligodendroglioma**

137. All are true about Subependymal giant cell astrocytoma (SEGA) except

(A) It is commonly associated with tuberous sclerosis

(B) They typically appear within the lateral ventricle

(C) Classically present in 6th decade of life

(D) These are low grade tumor

138. Best prognosis seen in which histopathological subtypes of medulloblastoma:

(A) Classic **(B) Anaplastic**

(C) Large cell **(D) Desmoplastic**

139. Which sub group of Medulloblastoma has the best prognosis?

(A) WNT Medulloblastoma **(B) Sonic Hedgehog (SHH) Medulloblastoma**

(C) Group 3 **(D) Group 4**

140. True about cerebellar mutism after posterior fossa surgery is

(A) It is secondary to damage to the dentatothalamocortical pathway

(B) It is due to damage to cerebellar cortex

(C) It is due to damage to cerebellar tonsils

(D) Managed by giving mannitol to patients

141. Intracranial teratomas are more common in

(A) Elderly **(B) Neonates**

(C) Adolescents **(D) Common in all age group**

142. Suggestion of preganglionic injury in brachial plexus is all except:

(A) Horner syndrome **(B) Paralysis of rhomboids**

(C) Paralysis of Serratus Anterior **(D) Paralysis of pectoralis minor**

143. All are features of Perinaud's syndrome except

(A) Pupillary accommodative paresis **(B) Light-near dissociation**

(C) Retraction nystagmus **(D) Respiratory irregularity**

144. Most common histological variant of paediatric Craniopharyngioma is:

(A) Squamous papillary variety **(B) Adenomatous variety**

(C) Mixed variety **(D) Glial variety**

145. The most common hormonal deficiency in paediatric age group Craniopharyngioma is

(A) Prolactin **(B) Growth hormone**

(C) LH & FSH **(D) ACTH**

146. True about Kambin's triangle is all except:

(A) It is a right triangle

(B) Anterior boundary is formed by the exiting root

(C) Posterior boundary is formed by the inferior articular process of the superior vertebra

(D) Inferior boundary is formed by the end plate of the lower lumbar segment

147. Which statement is false regarding arterial supply of spine.

(A) Posterior spinal arteries and Anterior spinal artery anastomose in Lazorthes's basket

(B) Paired Anterior spinal artery runs ventrally and supply the cord

(C) Anterior spinal artery originating from Vertebral artery near vertebrobasilar junction

(D) Artery of Adamkiewicz generally arises between T9 and L2 on the left side

148. All are true in relation to MR imaging except:

(A) Functional MRI is typically performed with the blood oxygen level–dependent pulse sequence

(B) Susceptibility-weighted imaging is a sequence in which compounds that distort a magnetic field, such as blood products and calcium, can be distinguished from other tissues

(C) In disk degeneration, the small proteoglycans aggregate in the nucleus ulposus increasing their capacity to attract and bind water

(D) T1-weighted imaging demonstrates anatomic structures well because of their high signal-to-noise ratio.

149. All is true in spine biomechanics except:

(A) Vertebral Body is the main axial load-bearing structure of the spine

(B) Inter Vertebral disk is analogous to a shock absorber

(C) Facet joints shares the load-bearing of the Vertebral Body with cervical spine facets sagittal orientation and Lumber spine facet coronal orientation

(D) Strong ligaments with short lever arms provide less stability of spine than weaker ligaments with long lever arm.

150. All are true except:

(A) Analysis In NASCIS I trial shows no difference in improvement in spinal cord injury with treatment of Methylprednisolone given after spinal injury

(B) Secondary analysis In NASCIS II trial shows recovery in spinal cord injury if treatment with Methylprednisolone given within 8 hr of spinal injury

(C) Analysis In NASCIS III trial shows recovery in spinal cord injury if treatment with Methylprednisolone given within 12 hr of spinal injury

(D) Spinal shock is characterized by the loss of reflexes, bladder function, and muscle tone below the level of injury

151. True about D wave in spinal monitoring is all except:

(A) D-waves are monitored directly at the spinal cord level

(B) For intramedullary spinal cord tumor resection D wave monitoring is considered the "gold standard".

(C) Neuromuscular blockade agents cannot be given during surgery if D wave is being monitored

(D) 50% decrease in amplitude of D wave signals is thought to be indicative of significant neurological injury

152. All is true in treatment of Osteoporosis except:

(A) Bisphosphonates are the mainstay of pharmacologic treatment of osteoporosis.

(B) Teriparatide is a bisphosphonate that increases bone mass through structural modification of bone mass.

(C) Common side effects of oral bisphosphonates therapy include heartburn, nausea, and gastritis

(D) Denosumab is a human-derived monoclonal antibody that inhibits bone resorption and does not necessarily lead to bone formation

153. Aneurysmal bone cyst all is true except:

(A) Aneurysmal bone cysts are malignant neoplastic proliferative lesions.

(B) Histologically, aneurysmal bone cysts contain fluid-filled spaces separated by fibrous septa

(C) In Spine the incidence of Aneurysmal bone cysts is greatest in the thoracolumbar region

(D) MRI demonstrate multiloculated, expansile, osteolytic lesions with thin, well-demarcated, eggshell-like cortical rims

154. Which statement is True regarding Multiple myeloma involvement of spine

(A) Multiple myelomas are the most common benign neoplasms of bone in adults

(B) In Multiple Myeloma the vertebral body is usually the site of tumor involvement.

(C) Multiple myelomas are manifestations of L-cell lymphoproliferative disease

(D) Multiple myeloma mainly occurs in cervical spine in fifth, sixth, and seventh decades of life

155. Extramedullary spinal cord tumors all is true except

(A) Back pain is the most common initial complaint in adults

(B) Most nerve sheath tumors arise from a ventral nerve root

(C) Spinal meningiomas are most common in the thoracic spine

(D) Filum terminale ependymomas are almost always of the myxopapillary type

156. In carpal tunnel syndrome (CTS) all is true except

(A) Individuals with CTS complain of numbness, paresthesias, and pain in the hand that may radiate to the forearm

(B) symptoms of CTS are often worse after use of the hand and at night

(C) Motor dysfunction in CTS is mostly seen in wrist flexor and deep flexor of forearm

(D) Ultrasonography has been suggested as the test of choice in the diagnosis of median entrapment neuropathy at the wrist

157. In cervical region ossification of the posterior longitudinal ligament (OPLL) all is true except-

(A) OPLL is an ectopic ossification mainly caused by endochondral ossification

(B) Symptoms caused by OPLL are those of cervical myelopathy and cervical Radiculopathy

(C) The anterior approach with direct removal of OPLL is the procedure of choice in cases of segmental OPLL.

(D) In cases of ossified Dura along with OPLL extensive removal of Dural ossification is strongly recommended.

158. All is true except:

(A) Patients of Lumbar canal stenosis usually present with intermittent neurogenic claudication

(B) Grade 3 in spondylolisthesis is 51 to 75 % slip according to Meyerding classification

(C) Dysplastic spondylolisthesis refers to acquired facet Hypertrophy at the L5-S1 articulation.

(D) Degenerative spondylolisthesis most common at the L4-L5 level

159. All is true regarding spinal ankylosing conditions except:

(A) Diffuse idiopathic skeletal hyperostosis (DISH) is an inflammatory skeletal disease characterized by ligamentous ossification of the anterolateral spine

(B) Ankylosing Spondylitis is a multisystem inflammatory disease primarily affecting the axial skeleton and sacroiliac joint

(C) There is strong correlation between HLA-B27 and Ankylosing Spondylitis

(D) DISH has a predilection for calcification and ossification of the anterior longitudinal ligament

160. Central cord syndrome true is:

(A) It's a complete spinal cord injury

(B) Greater motor deficit in lower limb than upper limb

(C) Mostly occur due to hyperextension injury

(D) upper limb movement improves earlier than lower limb movement

161. True about Jefferson fracture is:

(A) It's a burst fracture of C1

(B) Usually occur after sudden deacceleration injury

(C) Quadriparesis is most common symptom

(D) Rarely associated with C2 fracture

162. All is true about Odontoid Fracture except:

(A) Sudden extension is most common mechanism of injury

(B) Neck pain is common complain

(C) Anderson & D'Alonzo Classification is used

(D) Type II fracture is most common

163. Chance Fracture is a type of:

(A) Compression fracture **(B) Burst Fracture**

(C) Seat belt fracture **(D) Fracture dislocation**

164. True about Autonomic Hyperreflexia is all except:

(A) Exaggerated autonomic response to normal innocuous stimulus

(B) Always within 3 months of injury

(C) Occur in patients with lesion above T6

(D) Urinary Bladder distention is most common stimulus

165. Anterior odontoid screw fixation for odontoid fracture is contraindicated in :

(A) Disruption of the transverse ligament,

(B) Significant comminution of the C2 body,

(C) Osteopenia

(D) All of the above

166. True about hangman's fracture is all except:

(A) Bilateral fracture through pars interarticularis of C2

(B) Mostly due to hyperextension injury

(C) Mostly unstable requiring surgery

(D) Levine classification is used for these fractures

167. True about clay shoveler's fracture is:

(A) Avulsion of spinous process of C7

(B) Avulsion of transverse process of T1

(C) Fracture passing through lateral mass of C6 and C7

(D) Fracture of C6 and C7 lamina

168. Which of the following risk factor increases the likelihood of rupture of intracranial aneurysms

(A) Smoking **(B) Alcohol**

(C) Diabetes **(D) All of the above**

169. WFNS grade 4 of subarachnoid hemorrhage is :

(A) GCS score 13 **(B) GCS score 10**

(C) GCS score 6 without motor deficit **(D) GCS score 6 with motor deficit**

170. Highest risk of vasospasm after ruptured intracranial aneurysm is associated with

(A) Focal or diffuse thick layer of SAH and IVH present

(B) Focal or diffuse thick layer of SAH and no IVH

(C) Focal or diffuse thin layer of SAH and IVH present

(D) Focal or diffuse thin layer of SAH and no IVH

171. Dilation of take-off of a branch of the ICA of less than 3 mm is called

(A) Blister aneurysm **(B) Infundibulum**

(C) Mycotic aneurysm **(D) Microaneurysm**

172. Which of the following is false regarding PICA

(A) Tonsillomedullary segment forms the cranial loop

(B) Anterior medullary segment lies in front of the medulla

(C) Lateral medullary segment courses lateral to the medulla

(D) Junction of the posterior medullary and supratonsillar segments is called the choroidal point

173. The middle cerebral artery is divided into four segments, M1 through M4, which of the following is false

(A) M1 is insular segment

(B) M3 is opercular segment

(C) M4 is cortical segment

(D) The loop of the most posterior M3 segment branch that exits from the sylvian fissure is called the M point or sylvian point

174. In this image of DSA, what is the structure indicated by the arrow

(A) ICA aneurysm

(B) MCA aneurysm

(C) Acom artery aneurysm – inferiorly directed

(D) Basilar top aneurysm – laterally directed

175. Which of the following is not the branch of posterior cerebral artery

(A) Medial posterior choroidal artery **(B) Lateral posterior choroidal artery**

(C) Calcarine artery **(D) Anterior temporal artery**

176. Which of the following structure is not supplied by the recurrent artery of Heubner

(A) Thalamus **(B) Head of caudate nucleus**

(C) Internal capsule **(D) Globus pallidus**

177. Most common projection of anterior communicating artery aneurysm is

(A) Superior **(B) Inferior**

(C) Anterior **(D) Posterior**

178. The most common source of mycotic aneurysms is

(A) Endocarditis **(B) Meningitis**

(C) Encephalitis **(D) Cavernous sinus thrombophlebitis**

179. The annual risk of hemorrhage in patients with AVMs is

(A) 1-2 % **(B) 2-4%**

(C) 5-10% **(D) 10-15%**

180. All of the following statements regarding AVMs are true except

(A) Small AVMs have higher tendency to bleed

(B) Small AVMs have higher intra-arterial pressure

(C) Deeply located AVMs have higher risk of hemorrhage

(D) Hemorrhage is the most common symptom in larger AVMs

181. A 45 year man presented with sudden onset severe headache. On cerebral angiogram (DSA), an AVM of size 5 cm in right anterior frontal region draining into superior sagittal sinus is diagnosed. What is Spetzler-Martin grading of AVM in this patient?

(A) Grade 1 **(B) Grade 2**

(C) Grade 3 **(D) Grade 4**

182. Which of the following is most common location of the spontaneous intracerebral hemorrhage

(A) Putamen **(B) Thalmus**

(C) Subcortical white mater **(D) Cerebellum**

183. The golden hour period after onset of symptoms in stroke is

(A) 3 hours **(B) 6 hours**

(C) 9 hours **(D) 12 hours**

184. Vasospasm /delayed cerebral ischemia may develop after aneurysm rupture. Which of the following is false regarding its prevention and treatment

(A) Nimodipine remains standard treatment following aneurysmal SAH

(B) Symptomatic vasospasm prevention with triple-H therapy (hypervolemia, hypertension, and hemodilution) is not recommended.

(C) Symptomatic vasospasm should be treated promptly with induced hypertension and endovascular therapy

(D) None of the above

185. All the following statements regarding moyamoya disease are correct except

(A) cerebral ischemia including transient ischemic attacks (TIAs) is the most common presentation in children

(B) Intracranial bleeding is the typical presentation in adults

(C) Subarachnoid hemorrhage is the most common type of intracranial bleeding

(D) Combined direct and indirect cerebral revascularization is the treatment of choice

186. Buffalo Risk Assessment Scale (BRASS) is used for

(A) Large AVMs **(B) Unruptured aneurysms**

(C) Dural arteriovenous fistula grading **(D) Carotid Artery Stenting**

187. All the following are true for subclavian steal syndrome except

(A) Reversal flow in the vertebral artery

(B) It is caused by stenosis or occlusion in the subclavian or innominate artery

(C) Patients usually experience symptoms at rest

(D) Vertebrobasilar insufficiency is the main presentation

188. Highest mortality rate after aneurysm rupture is associated with following location

(A) ACoA aneurysm **(B) MCA aneurysm**

(C) Vertebrobasilar aneurysm **(D) Multiple aneurysms**

189. Which of the following is correct regarding annual rupture risk by size and location of aneurysm

(A) 5% for <7 mm size and posteriorly located aneurysm

(B) 10% for 7–12 mm size and anteriorly located aneurysm

(C) 20% for 13–24 mm size and anteriorly located aneurysm

(D) 40% for 25 mm or greater size and anteriorly located aneurysm

190. Three to 15% of AVMs are associated with an aneurysm. All the following are correct except

(A) Type I, dysplastic or remote aneurysms, are located at some distance from the AVM

(B) Type II, proximal aneurysms, arise from the circle of Willis or proximal portion of a major feeding vessel

(C) Type III, pedicular aneurysms, are located on the distal portion of a major feeding vessel

(D) Type IV, intranidal lesions, are found within the AVM

191. Which of the following is an element of case control study

(A) Cases are study participants in the source population who are exposed

(B) It involves matching of cases with controls

(C) Selection of cases and controls is based on exposure

(D) The study proceeds forward from cause to effect

192. All the following are true about cohort study except

(A) It is expensive and time taking

(B) Incidence of disease can be determined

(C) It is appropriate for diseases with long latency period

(D) Loss to follow up can introduce bias

193. Relative risk is a

(A) Rate **(B) Ratio**

(C) Proportion **(D) Percentage**

194. In a village with 1,00,000 population, 250 individuals were identified with diabetes mellitus. Calculate the prevalence of disease per 1000 population

(A) 2.5 **(B) 0.25**

(C) 5 **(D) 25**

195. What is the appropriate epidemiological measure to determine the burden of a disease in terms of number of cases present in a specified geographical area at a specific point in time

(A) Cumulative incidence **(B) Point prevalence**

(C) Period prevalence **(D) Incidence rate**

196. Most commonly used measure of central tendency is

(A) Mean **(B) Median**

(C) Mode **(D) Range**

197. In simple random sampling, the probability of selection of each individual is

(A) One **(B) Equal**

(C) Unequal **(D) Unknown**

198. All the following are measure of dispersion except

(A) Mean **(B) Range**

(C) Variance **(D) Standard deviation**

199. The following neurosurgeon is considered as father of neurosurgery in India

(A) Dr. B Ramamurthy **(B) Dr. Baldev Singh**

(C) Dr. Jacob Chandy **(D) Dr. Ram G Ginde**

200. Neurological Society of India (NSI) was established in following year

(A) 1950 **(B) 1951**

(C) 1952 **(D) 1953**