

INI CET Surgery

Sample Paper – 6

Duration: 14 Minutes

Maximum Marks: 15

Instructions

- This paper contains **15** Multiple Choice Questions (Single Best Response), modelled on the General Surgery content of **INI CET** (Institutes of National Importance Combined Entrance Test) conducted by AIIMS New Delhi.
- The **15-question** length matches the number of Surgery items you actually meet in the real 200-question paper.
- Each correct answer carries **+1 mark**. There is **negative marking of one-third (0.33) mark** for every incorrect answer; unattempted questions carry no penalty.
- Every question has **exactly one best answer**. Choose the single most appropriate option.
- Attempt this practice paper in one timed sitting of about **14 minutes**, the pace the real computer-based test demands.

Gastrointestinal Surgery

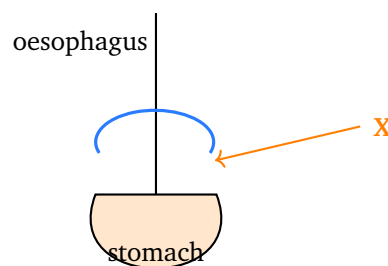
- Q1.** The characteristic oesophageal manometry finding in achalasia cardia is:
- (A) Normal relaxation of the lower oesophageal sphincter with vigorous peristalsis
 - (B) Failure of the lower oesophageal sphincter to relax, with absent oesophageal peristalsis
 - (C) Low resting lower oesophageal sphincter pressure with free reflux
 - (D) Simultaneous high-amplitude “nutcracker” contractions with normal sphincter relaxation
- Q2.** The histological type of oesophageal carcinoma that is commonest worldwide, arises in the upper two-thirds of the oesophagus and is strongly



linked to smoking and alcohol, is:

- (A) Adenocarcinoma
- (B) Small cell carcinoma
- (C) Squamous cell carcinoma
- (D) Gastrointestinal stromal tumour (GIST)

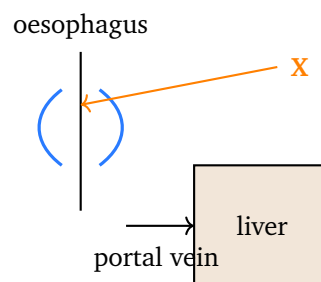
Q3. The schematic shows the standard anti-reflux operation for GERD, in which the gastric fundus is wrapped 360 degrees around the lower oesophagus (the wrap is marked X). This operation is the:



- (A) Nissen fundoplication
- (B) Heller myotomy
- (C) Billroth I gastrectomy
- (D) Ivor-Lewis oesophagectomy

Hepatobiliary and Pancreatic Surgery

Q4. The diagram shows portal blood being diverted into collateral channels in portal hypertension. The dilated submucosal veins at the lower oesophagus (marked X), which carry a high risk of catastrophic upper GI haemorrhage, are:



- (A) Oesophageal varices



- (B) Haemorrhoids
- (C) Caput medusae
- (D) Mallory-Weiss tears

Q5. The minimally invasive radiological procedure that creates a channel between the portal and hepatic veins to lower portal pressure and control variceal bleeding without open surgery is the:

- (A) Surgical portocaval shunt
- (B) Proximal splenorenal shunt
- (C) Distal splenorenal (Warren) shunt
- (D) Transjugular intrahepatic portosystemic shunt (TIPS)

Breast and Endocrine Surgery

Q6. A catecholamine-secreting tumour of the adrenal medulla, presenting with episodic hypertension, headache, palpitations and sweating, is a:

- (A) Adrenocortical adenoma
- (B) Aldosteronoma (Conn syndrome)
- (C) Pheochromocytoma
- (D) Adrenal myelolipoma

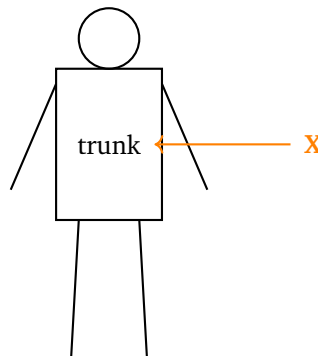
Q7. Before adrenalectomy for a pheochromocytoma, the essential preoperative preparation to prevent an intraoperative hypertensive crisis is:

- (A) Starting a beta-blocker first, before any other drug
- (B) Alpha-adrenergic blockade (for example phenoxybenzamine) for about 1 to 2 weeks
- (C) Fluid restriction to reduce circulating volume
- (D) Preoperative radioactive iodine ablation

Trauma and Critical Care



- Q8.** In the adult “rule of nines” body diagram shown, the region marked X is the entire anterior trunk. The percentage of total body surface area it represents is:



- (A) 9%
(B) 18%
(C) 27%
(D) 36%
- Q9.** Using the Parkland formula ($4 \text{ mL/kg/\%TBSA}$ of Ringer lactate), the fluid required in the first 24 hours for a 70 kg adult with 40% burns is approximately:
- (A) 11,200 mL (about 11.2 L)
(B) 5,600 mL (about 5.6 L)
(C) 2,800 mL (about 2.8 L)
(D) 22,400 mL (about 22.4 L)
- Q10.** In Parkland-formula burn resuscitation, the proportion of the calculated first-24-hour fluid that is given in the initial 8 hours (timed from the moment of the burn) is:
- (A) One quarter
(B) One half
(C) One third
(D) The entire volume



Urology and Vascular Surgery

- Q11.** Primary varicose veins of the lower limb most commonly arise from valvular incompetence at the:
- (A) Deep femoral vein
 - (B) Popliteal artery
 - (C) Great (long) saphenous vein and its saphenofemoral junction
 - (D) Dorsal venous arch of the foot
- Q12.** The most feared acute, life-threatening complication of a deep vein thrombosis of the lower limb is:
- (A) Secondary varicose veins
 - (B) Chronic venous (stasis) ulcer
 - (C) Pulmonary thromboembolism
 - (D) Lymphoedema

Surgical Oncology and Miscellaneous

- Q13.** In laparoscopic (minimal access) surgery, the gas most commonly used to create the pneumoperitoneum is:
- (A) Oxygen
 - (B) Nitrous oxide
 - (C) Room air
 - (D) Carbon dioxide
- Q14.** A major physiological effect of a carbon dioxide pneumoperitoneum during laparoscopy is:
- (A) Hypocapnia with a respiratory alkalosis
 - (B) A fall in intra-abdominal pressure
 - (C) Increased venous return from the lower limbs



(D) Hypercapnia with reduced venous return from raised intra-abdominal pressure

Q15. The tension-free mesh repair of an inguinal hernia, in which a flat polypropylene mesh reinforces the posterior wall of the inguinal canal, is the:

- (A) Lichtenstein repair
- (B) Bassini repair
- (C) Shouldice repair
- (D) McVay (Cooper ligament) repair



Detailed Solutions**Q1.****Solution**

Concept – achalasia cardia: Achalasia is a primary motility disorder from loss of inhibitory neurons in the myenteric plexus.

Step 1 – name the two hallmarks: The lower oesophageal sphincter **fails to relax** on swallowing, and there is **absent (aperistaltic) body peristalsis**.

Step 2 – correlate: This produces a dilated oesophagus with a smooth “bird-beak” tapering on barium swallow, and a high resting sphincter pressure.

Why the other options are wrong:

- A, normal relaxation with vigorous peristalsis: describes a normal oesophagus, not achalasia.
- C, low sphincter pressure with reflux: this is the pattern of GERD, the opposite problem.
- D, nutcracker contractions with normal relaxation: describes a different spastic disorder, not achalasia.

Final Answer: Non-relaxing sphincter with absent peristalsis ⇒ **B**

Answer: (B) [Go Back to Q1](#)

Q2.**Solution**

Concept – oesophageal carcinoma histology: Two main types differ in site and risk factors.

Step 1 – match the clues: An upper-two-thirds tumour linked to smoking and alcohol, and the commonest type worldwide, is **squamous cell carcinoma**.

Step 2 – contrast: Adenocarcinoma arises in the lower third from Barrett metaplasia and is commoner in Western populations.

Why the other options are wrong:

- A, adenocarcinoma: lower-third tumour of GERD and Barrett oesophagus, not the upper two-thirds.
- B, small cell carcinoma: a rare, aggressive neuroendocrine oesophageal tumour.
- D, GIST: a mesenchymal tumour, uncommon in the oesophagus and not an



epithelial carcinoma.

Final Answer: Squamous cell carcinoma $\Rightarrow$ C

Answer: (C) [Go Back to Q2](#)

Q3.

Solution

Concept – anti-reflux surgery: A fundal wrap recreates a valve at the gastro-oesophageal junction.

Step 1 – identify X: The 360 degree wrap of gastric fundus around the lower oesophagus is a **Nissen fundoplication**, the standard operation for refractory GERD.

Step 2 – rationale: The wrap raises lower-oesophageal-sphincter pressure and abolishes pathological reflux.

Why the other options are wrong:

- B, Heller myotomy: cuts the sphincter muscle for achalasia, the opposite indication.
- C, Billroth I gastrectomy: a distal gastric resection with gastroduodenal anastomosis, not an anti-reflux procedure.
- D, Ivor-Lewis oesophagectomy: a resection for oesophageal cancer, not for reflux.

Final Answer: Nissen fundoplication $\Rightarrow$ A

Answer: (A) [Go Back to Q3](#)

Q4.

Solution

Concept – portal hypertension collaterals: Raised portal pressure forces blood into portosystemic collateral veins.

Step 1 – identify X: Dilated submucosal veins at the lower oesophagus are **oesophageal varices**, formed via the left gastric (coronary) vein.

Step 2 – significance: Their thin walls rupture easily, causing torrential upper GI haemorrhage.

Why the other options are wrong:

- B, haemorrhoids: anorectal collaterals, a lower-GI site of portosystemic



shunting.

- C, caput medusae: dilated periumbilical veins of the abdominal wall, not the oesophagus.
- D, Mallory-Weiss tears: mucosal lacerations from vomiting, not varices.

Final Answer: Oesophageal varices ⇒ A

Answer: (A) [Go Back to Q4](#)

Q5.

Solution

Concept – lowering portal pressure: Shunts divert portal blood to the systemic circulation.

Step 1 – name the procedure: A **TIPS** places a stent between a portal vein branch and a hepatic vein through a transjugular route, with no laparotomy.

Step 2 – use: It controls refractory variceal bleeding and diuretic-resistant ascites.

Why the other options are wrong:

- A, surgical portocaval shunt: an open operation, not minimally invasive.
- B, proximal splenorenal shunt: an open surgical shunt.
- C, distal splenorenal (Warren) shunt: a selective open surgical shunt, not a radiological one.

Final Answer: Transjugular intrahepatic portosystemic shunt (TIPS) ⇒ D

Answer: (D) [Go Back to Q5](#)

Q6.

Solution

Concept – adrenal medullary tumour: The medulla makes catecholamines.

Step 1 – match the picture: Episodic hypertension with the triad of headache, palpitations and sweating points to a **phaeochromocytoma**.

Step 2 – confirm: Raised plasma or urinary metanephrines confirm the diagnosis before imaging.

Why the other options are wrong:

- A, adrenocortical adenoma: a cortical tumour, often causing Cushing syndrome, not paroxysmal catecholamine surges.



- B, aldosteronoma: causes hypertension with hypokalaemia, not the paroxysmal adrenergic triad.
- D, myelolipoma: a benign, usually non-functioning fat-and-marrow tumour.

Final Answer: Pheochromocytoma $\Rightarrow$

Answer: (C) [Go Back to Q6](#)

Q7.

Solution

Concept – preoperative preparation: Blocking catecholamine effects prevents an intraoperative crisis.

Step 1 – name the step: Alpha-blockade (for example phenoxybenzamine) for about 1 to 2 weeks controls blood pressure and re-expands the contracted vascular volume.

Step 2 – sequence: A beta-blocker is added only after adequate alpha-blockade, to control reflex tachycardia.

Why the other options are wrong:

- A, beta-blocker first: unopposed alpha effect can precipitate a hypertensive crisis and heart failure.
- C, fluid restriction: these patients are volume-contracted and need repletion, not restriction.
- D, radioactive iodine: a thyroid therapy, irrelevant to an adrenal tumour.

Final Answer: Alpha-blockade for 1 to 2 weeks $\Rightarrow$

Answer: (B) [Go Back to Q7](#)

Q8.

Solution

Concept – rule of nines: The adult body surface is divided into multiples of nine.

Step 1 – read X: The whole anterior trunk (chest plus abdomen) is **18%** of total body surface area.

Step 2 – cross-check: Each of head, each arm counts 9%; the posterior trunk is another 18%; each leg is 18%; the perineum is 1%.

Why the other options are wrong:



- A, 9%: the value for the head or for one whole upper limb.
- C, 27%: not an assigned rule-of-nines value.
- D, 36%: this is the whole trunk (anterior plus posterior), not the anterior alone.

Final Answer: 18% $\Rightarrow$ **B**

Answer: (B) [Go Back to Q8](#)

Q9.

Solution

Concept – Parkland formula: Fluid volume is calculated from weight and burn area.

Step 1 – substitute: $\text{Volume} = 4 \times \text{weight (kg)} \times \%TBSA = 4 \times 70 \times 40$.

Step 2 – compute: $4 \times 70 = 280$; then $280 \times 40 = 11,200$ mL, that is about 11.2 L of Ringer lactate over 24 hours.

Why the other options are wrong:

- B, 5,600 mL: this halves the correct figure (uses 2 mL/kg/% instead of 4).
- C, 2,800 mL: far too little; uses only 1 mL/kg/%.
- D, 22,400 mL: double the correct figure (uses 8 mL/kg/%).

Final Answer: About 11,200 mL $\Rightarrow$ **A**

Answer: (A) [Go Back to Q9](#)

Q10.

Solution

Concept – timing of burn resuscitation: The calculated fluid is split across the first 24 hours.

Step 1 – state the rule: Half of the first-24-hour volume is given in the initial 8 hours (from the time of injury), and the remaining half over the next 16 hours.

Step 2 – apply: For 11,200 mL, about 5,600 mL is delivered in the first 8 hours.

Why the other options are wrong:

- A, one quarter: understates the early requirement.
- C, one third: not the Parkland split.



- D, the entire volume: giving all of it in 8 hours would cause dangerous overload.

Final Answer: One half $\Rightarrow$ **B**

Answer: (B) [Go Back to Q10](#)

Q11.

Solution

Concept – varicose veins: Superficial venous reflux dilates the surface veins.

Step 1 – name the source: Primary varicosities most often begin with an incompetent **saphenofemoral junction and great saphenous vein**.

Step 2 – mechanism: Failed valves let blood reflux distally, raising superficial venous pressure and producing tortuous veins.

Why the other options are wrong:

- A, deep femoral vein: a deep vein; its disease causes deep venous problems, not primary varicosities.
- B, popliteal artery: an artery, not part of the venous reflux pathway.
- D, dorsal venous arch: a distal foot vein, not the usual origin of reflux.

Final Answer: Great saphenous vein and saphenofemoral junction $\Rightarrow$ **C**

Answer: (C) [Go Back to Q11](#)

Q12.

Solution

Concept – complications of DVT: A leg-vein thrombus can embolise.

Step 1 – name the acute danger: The dreaded acute complication is **pulmonary thromboembolism**, when the clot detaches and lodges in the pulmonary arteries.

Step 2 – significance: A large embolus can cause sudden hypoxia, right-heart strain and death.

Why the other options are wrong:

- A, secondary varicose veins: a late, chronic sequel, not the acute threat.
- B, venous ulcer: part of chronic post-thrombotic syndrome, not acute.
- D, lymphoedema: a chronic swelling, not the immediate life-threatening event.



Final Answer: Pulmonary thromboembolism $\Rightarrow$ C

Answer: (C) [Go Back to Q12](#)

Q13.

Solution

Concept – pneumoperitoneum gas: The abdomen is insufflated to create a working space.

Step 1 – name the gas: **Carbon dioxide** is used because it is highly soluble, non-combustible and rapidly cleared by the lungs.

Step 2 – safety: Its solubility minimises the risk of a fatal gas embolism compared with less soluble gases.

Why the other options are wrong:

- A, oxygen: supports combustion and is unsafe with diathermy.
- B, nitrous oxide: supports combustion and can expand bowel gas.
- C, room air: poorly soluble, raising the risk of dangerous gas embolism.

Final Answer: Carbon dioxide $\Rightarrow$ D

Answer: (D) [Go Back to Q13](#)

Q14.

Solution

Concept – physiology of pneumoperitoneum: Absorbed CO₂ and raised abdominal pressure change physiology.

Step 1 – name the effect: Absorbed carbon dioxide causes **hypercapnia**, while the raised intra-abdominal pressure compresses the IVC and **reduces venous return**.

Step 2 – consequences: Hypercapnia lowers pH (respiratory acidosis), and reduced preload can drop cardiac output.

Why the other options are wrong:

- A, hypocapnia with alkalosis: the opposite; CO₂ is absorbed, not lost.
- B, fall in intra-abdominal pressure: insufflation raises, not lowers, the pressure.
- C, increased venous return: raised pressure compresses the IVC and decreases venous return.



Final Answer: Hypercapnia with reduced venous return $\Rightarrow$ D

Answer: (D) [Go Back to Q14](#)

Q15.

Solution

Concept – inguinal hernia repair: Repairs are either tension-free (mesh) or tissue-suture (tension).

Step 1 – name the mesh repair: The **Lichtenstein repair** lays a flat polypropylene mesh over the posterior wall, reinforcing it without tension.

Step 2 – advantage: The tension-free design gives low recurrence and quick recovery, making it the gold standard open repair.

Why the other options are wrong:

- B, Bassini repair: a sutured tissue repair, not a mesh repair.
- C, Shouldice repair: a multilayer sutured tissue repair, without mesh.
- D, McVay repair: sutures the conjoint tendon to Cooper ligament, a tissue repair used for femoral hernias.

Final Answer: Lichtenstein repair $\Rightarrow$ A

Answer: (A) [Go Back to Q15](#)



Answer Key

Q	Ans	Q	Ans	Q	Ans	Q	Ans	Q	Ans
1	B	2	C	3	A	4	A	5	D
6	C	7	B	8	B	9	A	10	B
11	C	12	C	13	D	14	D	15	A

