INI CET Obstetrics and Gynaecology

Sample Paper – 3

Duration: 14 Minutes **Maximum Marks: 15**

Instructions

- This paper contains **15** Multiple Choice Questions (Single Best Response), modelled on the Obstetrics and Gynaecology content of **INI CET** (Institutes of National Importance Combined Entrance Test) conducted by AIIMS New Delhi.
- The **15-question** length matches the number of Obstetrics and Gynaecology 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 for each clinical scenario.
- Attempt this practice paper in one timed sitting of about **14 minutes**, the pace the real computer-based test demands.

Obstetrics: Antenatal Care and Physiology

Q1. The first-trimester combined screening test for Down syndrome uses ultrasound nuchal translucency together with which two maternal serum markers?

(A) Alpha-fetoprotein and unconjugated estriol

(B) Free beta-hCG and PAPP-A (pregnancy-associated plasma protein A)

(C) Inhibin A and alpha-fetoprotein

(D) Prolactin and progesterone

Q2. Nuchal translucency, the fluid space behind the fetal neck used in aneuploidy screening, is best measured by ultrasound during which gestational window?

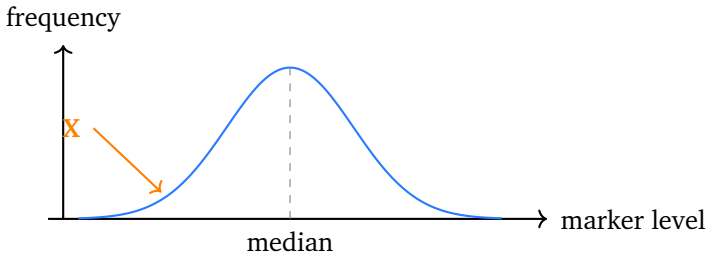
(A) 6 to 9 weeks

(B) 18 to 22 weeks

(C) 11 weeks to 13 weeks plus 6 days (crown-rump length 45 to 84 mm)

(D) 24 to 28 weeks

Q3. The curve shows the population distribution of a second-trimester maternal serum marker. In the quadruple (quad) test, the classic pattern in a Down syndrome pregnancy, where alpha-fetoprotein shifts toward the low tail marked **X**, is:



(A) Low AFP, low unconjugated estriol, high hCG, high inhibin A

(B) High AFP, high unconjugated estriol, low hCG, low inhibin A

(C) Normal levels of all four markers

(D) Low hCG with a markedly raised AFP

Obstetrics: Complications of Pregnancy

Q4. Using the one-step (IADPSG) approach with a 75 g oral glucose tolerance test, universal screening for gestational diabetes mellitus in a low-risk woman is usually performed at:

(A) 6 to 10 weeks

(B) 34 to 36 weeks

(C) Only at the time of delivery

(D) 24 to 28 weeks

Q5. On a 75 g OGTT interpreted by IADPSG criteria, gestational diabetes is diagnosed when the fasting plasma glucose equals or exceeds:

(A) 70 mg/dL

(B) 140 mg/dL

(C) 126 mg/dL

(D) 92 mg/dL

Q6. For most women with newly diagnosed gestational diabetes mellitus, the appropriate first-line management is:

(A) Medical nutrition therapy (diet modification) with exercise

(B) Immediate insulin for every patient regardless of glucose values

(C) Elective caesarean section at 34 weeks

(D) Sulfonylureas started before any dietary trial

Labour and Puerperium

Q7. The Bishop score grades cervical favourability before induction of labour using the five parameters in the table shown. A higher total score indicates:

Bishop score parameter		
Parameter	Low (0)	High (3)
Cervical dilatation	closed	$\geq$5 cm
Effacement	0–30%	$\geq$80%
Station	-3	$+1/+2$
Consistency	firm	soft
Position		

(A) An unfavourable cervix that first needs prostaglandin priming

(B) A favourable cervix that predicts a successful induction of labour

(C) Established cephalopelvic disproportion

(D) Fetal distress requiring immediate caesarean section

Q8. In a woman with an unfavourable cervix (low Bishop score) who needs induction of labour, the preferred agent for cervical ripening is:

(A) High-dose intravenous oxytocin alone

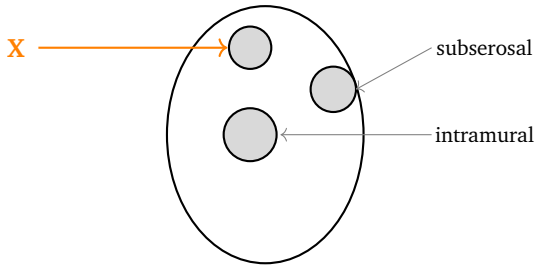
(B) Intramuscular ergometrine

(C) Vaginal prostaglandin E2 (dinoprostone)

(D) Intravenous magnesium sulfate

Gynaecology: Benign and Endocrine

Q9. In the diagram of the uterus, three leiomyomas are shown. The fibroid marked **X** lies just beneath the endometrium and projects into the uterine cavity. This type is a:



(A) Subserosal fibroid

(B) Intramural fibroid

(C) Pedunculated subserosal fibroid

(D) Submucosal fibroid

Q10. Of the fibroid locations, the submucosal type is most characteristically associated with which presenting complaint?

(A) Acute urinary retention as the usual first sign

(B) Heavy menstrual bleeding (menorrhagia)

(C) Massive ascites

(D) Postmenopausal bleeding as the rule

Q11. A 30-year-old woman with a symptomatic uterine fibroid wishes to preserve her fertility. The surgical procedure of choice is:

(A) Myomectomy

(B) Total abdominal hysterectomy

(C) Bilateral salpingo-oophorectomy

(D) Pelvic exenteration

Gynaecological Oncology

Q12. The serum tumour marker most useful for monitoring the response and recurrence of epithelial ovarian carcinoma is:

(A) Alpha-fetoprotein (AFP)

(B) CA-125

(C) Prostate-specific antigen (PSA)

(D) Beta-hCG

Q13. In adult women, the most common histological category of ovarian malignancy is:

(A) Surface epithelial tumours

(B) Germ cell tumours

(C) Sex cord-stromal tumours

(D) Metastatic (Krukenberg) tumours

Contraception, Infertility and Infections

Q14. According to the WHO 2021 reference values for semen analysis, the lower reference limit for sperm concentration is approximately:

(A) 5 million per mL

(B) 40 million per mL

(C) 16 million per mL

(D) 100 million per mL

Q15. For a couple with severe male-factor infertility (very low sperm count and poor motility), the assisted reproductive technique of choice is:

(A) Intrauterine insemination (IUI)

(B) Timed natural intercourse

(C) Intracytoplasmic sperm injection (ICSI)

(D) Ovulation induction with clomiphene alone

Detailed Solutions

Q1.

Solution

Concept – first-trimester combined screening: Aneuploidy screening pairs an ultrasound finding with biochemistry.

Step 1 – name the biochemical markers: The combined test uses **free beta-hCG** and **PAPP-A**.

Step 2 – the Down syndrome pattern: In trisomy 21, free beta-hCG is high and PAPP-A is low, while nuchal translucency is increased.

Why the other options are wrong:

- A and C, AFP, estriol and inhibin A: these belong to second-trimester (quad) testing, not the first-trimester combined test.
- D, prolactin and progesterone: not used in aneuploidy screening.

Final Answer: Free beta-hCG and PAPP-A $\Rightarrow$ B

Answer: (B) Go Back to Q1

Q2.

Solution

Concept – timing of nuchal translucency: The measurement is valid only in a narrow window.

Step 1 – state the window: Nuchal translucency is measured between **11 weeks and 13 weeks plus 6 days**, when the crown-rump length is 45 to 84 mm.

Step 2 – why this window: Before 11 weeks the fetus is too small to measure reliably; after 14 weeks the fluid is reabsorbed.

Why the other options are wrong:

- A, 6 to 9 weeks: too early, the structure is not yet measurable.
- B, 18 to 22 weeks: this is the anomaly scan window.
- D, 24 to 28 weeks: too late; NT is no longer assessable.

Final Answer: 11 to 13 weeks plus 6 days $\Rightarrow$ C

Answer: (C) Go Back to Q2

Q3.

Solution

Concept – the quadruple test pattern: Four serum markers shift in characteristic directions in trisomy 21.

Step 1 – recall the four markers: The quad test measures AFP, unconjugated estriol, hCG and inhibin A.

Step 2 – read the Down syndrome pattern: AFP and estriol fall (AFP moves to the low tail marked X), while hCG and inhibin A rise.

Why the other options are wrong:

- B, high AFP with low hCG: this is the reverse of the trisomy 21 pattern.
- C, all normal: would not flag an at-risk pregnancy.
- D, low hCG with high AFP: a raised AFP suggests a neural tube defect, not Down syndrome.

Final Answer: Low AFP, low estriol, high hCG, high inhibin A $\Rightarrow$ $\boxed{\text{A}}$

Answer: (A) Go Back to Q3

Q4.

Solution

Concept – timing of GDM screening: Screening is timed to placental insulin resistance.

Step 1 – state the window: Universal screening for gestational diabetes is done at **24 to 28 weeks**.

Step 2 – why this window: Placental hormones peak here, so insulin resistance and hyperglycaemia become detectable.

Why the other options are wrong:

- A, 6 to 10 weeks: early testing is reserved for high-risk women to detect pre-existing diabetes.
- B, 34 to 36 weeks: too late for optimal glycaemic management.
- C, at delivery: misses the whole treatment window.

Final Answer: 24 to 28 weeks $\Rightarrow$ $\boxed{\text{D}}$

Answer: (D) Go Back to Q4

Q5.

Solution

Concept – IADPSG diagnostic thresholds: A single abnormal value on the 75 g OGTT diagnoses GDM.

Step 1 – state the fasting cutoff: Gestational diabetes is diagnosed when fasting plasma glucose is **92 mg/dL** or higher.

Step 2 – the full set: The other cutoffs are 180 mg/dL at 1 hour and 153 mg/dL at 2 hours; any one met confirms GDM.

Why the other options are wrong:

- A, 70 mg/dL: a normal fasting value.
- B, 140 mg/dL: near the older 1-hour glucose-challenge screen threshold, not the fasting cutoff.
- C, 126 mg/dL: the cutoff for overt (pre-existing) diabetes, not GDM.

Final Answer: Fasting glucose $\geq$ 92 mg/dL $\Rightarrow$ $\boxed{\text{D}}$

Answer: (D) Go Back to Q5

Q6.

Solution

Concept – first-line GDM management: Lifestyle change comes before any drug.

Step 1 – name the first step: The first-line treatment is **medical nutrition therapy (diet) with exercise**.

Step 2 – escalation: If glucose targets are not met after 1 to 2 weeks, insulin (or metformin) is added.

Why the other options are wrong:

- B, insulin for all: reserved for those failing dietary control.
- C, elective caesarean at 34 weeks: not indicated by the diagnosis alone.
- D, sulfonylureas before diet: not the recommended first step.

Final Answer: Diet and exercise first $\Rightarrow$ $\boxed{\text{A}}$

Answer: (A) Go Back to Q6

Q7.

Solution

Concept – the Bishop score: It quantifies how ready the cervix is for labour.

Step 1 – interpret a high score: A high total (each parameter scoring toward the right of the table) means a **favourable cervix** that predicts a successful induction.

Step 2 – practical cutoff: A score of 8 or more suggests induction will succeed as readily as spontaneous labour; a low score (under 6) usually needs ripening first.

Why the other options are wrong:

- A, unfavourable cervix needing priming: describes a low, not a high, score.
- C, cephalopelvic disproportion: the Bishop score does not assess the pelvis-fetus fit.
- D, fetal distress: assessed by fetal heart monitoring, not the Bishop score.

Final Answer: Favourable cervix predicting successful induction ⇒ B

Answer: (B) Go Back to Q7

Q8.

Solution

Concept – cervical ripening agents: An unfavourable cervix is prepared before oxytocin.

Step 1 – name the agent: Vaginal prostaglandin E2 (dinoprostone) is the preferred ripening agent for a low Bishop score.

Step 2 – sequence: Prostaglandins soften and dilate the cervix; oxytocin is then used to augment contractions.

Why the other options are wrong:

- A, oxytocin alone: poor at ripening an unfavourable cervix and may cause failed induction.
- B, ergometrine: a uterotonic for postpartum haemorrhage, contraindicated before delivery.
- D, magnesium sulfate: a tocolytic and anticonvulsant, it relaxes rather than ripens the cervix.

Final Answer: Vaginal prostaglandin E2 ⇒ C

Answer: (C) Go Back to Q8

Q9.

Solution

Concept – fibroid classification by location: Fibroids are named by their position in the uterine wall.

Step 1 – identify X: A fibroid lying beneath the endometrium and bulging into the cavity is a **submucosal fibroid**.

Step 2 – contrast the layers: Intramural fibroids sit within the myometrium; subserosal fibroids project outward under the serosa.

Why the other options are wrong:

- A and C, subserosal and pedunculated subserosal: these grow outward from the serosal surface.
- B, intramural: confined within the muscle wall, not projecting into the cavity.

Final Answer: Submucosal fibroid $\Rightarrow$ $\boxed{\text{D}}$

Answer: (D) Go Back to Q9

Q10.

Solution

Concept – symptoms by fibroid type: Location determines the dominant complaint.

Step 1 – match the submucosal type: Submucosal fibroids distort the cavity and cause **heavy menstrual bleeding (menorrhagia)**.

Step 2 – consequence: Chronic blood loss can lead to iron deficiency anaemia and subfertility.

Why the other options are wrong:

- A, urinary retention: a pressure symptom of large subserosal or cervical fibroids, not the rule for submucosal ones.
- C, ascites: not a typical fibroid feature.
- D, postmenopausal bleeding: fibroids usually regress after menopause; new bleeding then needs cancer workup.

Final Answer: Heavy menstrual bleeding $\Rightarrow$ $\boxed{\text{B}}$

Answer: (B) Go Back to Q10

Q11.

Solution

Concept – fertility-sparing fibroid surgery: The uterus must be preserved when childbearing is desired.

Step 1 – name the procedure: Myomectomy removes the fibroids while conserving the uterus.

Step 2 – rationale: It preserves the endometrial cavity for future pregnancy, unlike definitive surgery.

Why the other options are wrong:

- B, total hysterectomy: removes the uterus and ends fertility.
- C, bilateral salpingo-oophorectomy: removes the ovaries and tubes, causing sterility and menopause.
- D, pelvic exenteration: a radical cancer operation, wholly inappropriate here.

Final Answer: Myomectomy $\Rightarrow$ A

Answer: (A) Go Back to Q11

Q12.

Solution

Concept – ovarian tumour markers: Each ovarian tumour type has a signature marker.

Step 1 – match epithelial ovarian cancer: CA-125 is the marker used to monitor epithelial ovarian carcinoma.

Step 2 – use: A rising CA-125 signals recurrence; a falling level shows response to chemotherapy.

Why the other options are wrong:

- A, AFP: raised in yolk sac (endodermal sinus) germ cell tumours, not epithelial cancers.
- C, PSA: a prostate marker.
- D, beta-hCG: raised in choriocarcinoma and dysgerminoma, not typical epithelial tumours.

Final Answer: CA-125 $\Rightarrow$ B

Answer: (B) Go Back to Q12

Q13.

Solution

Concept – histology of ovarian cancer: One category dominates in adults.

Step 1 – name the commonest: Surface epithelial tumours (such as serous carcinoma) make up the large majority of ovarian malignancies in adult women.

Step 2 – contrast by age: Germ cell tumours are the commoner malignancy in young girls and adolescents.

Why the other options are wrong:

- B, germ cell tumours: predominate in the young, not adults overall.
- C, sex cord-stromal tumours: uncommon and often hormone-secreting.
- D, Krukenberg (metastatic) tumours: secondary deposits, usually from stomach, not the primary group.

Final Answer: Surface epithelial tumours $\Rightarrow$ A

Answer: (A) Go Back to Q13

Q14.

Solution

Concept – semen analysis reference values: WHO 2021 sets lower reference limits, not averages.

Step 1 – state the concentration limit: The lower reference limit for sperm concentration is about **16 million per mL**.

Step 2 – context: Other limits include a total count of about 39 million per ejaculate and 42% total motility.

Why the other options are wrong:

- A, 5 million per mL: this is severe oligospermia, well below normal.
- B, 40 million per mL: near the previous mean count, not the lower limit.
- D, 100 million per mL: far above the reference threshold.

Final Answer: About 16 million per mL $\Rightarrow$ C

Answer: (C) Go Back to Q14

Q15.

Solution

Concept – assisted reproduction for male factor: The technique is matched to sperm quality.

Step 1 – choose the technique: For severe male factor infertility, **intracytoplasmic sperm injection (ICSI)** is the treatment of choice.

Step 2 – why ICSI: A single sperm is injected directly into the oocyte, bypassing the poor count and motility.

Why the other options are wrong:

- A, IUI: needs an adequate number of motile sperm, which are lacking here.
- B, timed intercourse: unlikely to succeed with severe abnormalities.
- D, clomiphene alone: induces ovulation in the woman and does not address the male factor.

Final Answer: Intracytoplasmic sperm injection (ICSI) $\Rightarrow$ $\boxed{\text{C}}$

Answer: (C) Go Back to Q15

Answer Key

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