

**CBAT-PC-PNDT-2022-SET-D**

Time: 2 Hours

Section-A : 50 MCQs of one mark each = 50 Marks

Section-B : 10 Short Questions with five marks each = 50 Marks

Total Marks = 100 Marks

Roll No. (in figures) .....

(in words).....

.....  
**(Signature of Candidate)**

**I have checked the entries made above and in the OMR Sheet by the candidate.**

.....  
**(Signature of Invigilator)**

**CANDIDATES MUST READ THE FOLLOWING INFORMATION / INSTRUCTIONS BEFORE STARTING THE QUESTION PAPER.**

1. All the candidates must return the test booklet as well as answer-sheet to the Invigilator concerned before leaving the Examination Hall. If any candidate leaves the examination hall without handing over the test booklet / answer sheet to the Invigilator, a case of use of unfair means/ misbehavior will be registered against him/ her in addition to lodging an FIR with the Police. The answer-sheet of such a candidate will not be evaluated.
2. The candidates must not do any rough work or writing work in the answer-sheet (OMR Sheet). All rough work is to be done in the test booklet.
3. Candidates will be required to darken the circle by using **blue/ black ball point pen** only.
4. Books, papers, slide rule, log table, cellular phone, pager, calculator or any other electronic gadget etc. are not allowed in the Examination Hall.
5. **BEFORE ANSWERING THE QUESTIONS, THE CANDIDATES SHOULD ENSURE THAT THEY HAVE BEEN SUPPLIED THE CORRECT AND COMPLETE TEST BOOKLET CONTAINING (SECTION – A : 1 TO 50 MCQs AND SECTION-B : 1 TO 10 SHORT QUESTIONS), COMPLAINTS REGARDING MISPRINT ETC. WILL NOT BE ENTERTAINED 10 MINUTES AFTER THE EXAMINATION GETS STARTED.**

**SECTION-A**

1. Frequencies typical for diagnostic ultrasound of abdomen are:  
A. 3-5 megahertz (MHz)                      B. 1-3 megahertz (MHz)  
C. 8-10 megahertz (MHz)                      D. 20-30 megahertz (MHz)
2. Material used within the ultrasound transducer is:  
A. Titanium                                      B. Piezoelectric crystals  
C. Small magnet                                D. Gadolinium
3. Heart movements are recorded by:  
A. B mode                                        B. A mode  
C. M mode                                        D. AB mode
4. Which of the following statement is not true regarding Fetal abdomen ultrasound:  
A. The fetal stomach has a constant volume  
B. The small bowel is hyperechoic in second trimester  
C. Colonic peristalsis can be visualized from the third trimester.  
D. Meconium is seen from 16 weeks
5. Which of the following statement is true for Fetal renal system:  
A. The kidneys will be visualized only after 18 weeks  
B. The normal renal pelvis can measure upto 10 mm in AP dimension  
C. Corticomedullary differentiation is seen in the second trimester  
D. Fetal lobulations is seen from 24 weeks
6. Bilayer thickness of Postmenopausal endometrium with no hormonal replacement therapy is considered normal if it is-  
A. Less than 5 mm                              B. Less than 10 mm  
C. Less than 15 mm                              D. Less than 20 mm
7. The form under PC-PNDT act for application for registration or renewal of registration of ultrasound clinic is  
A. Form A                                        B. Form B  
C. Form C                                        D. Form D
8. One of the following is not a feature of Horseshoe kidney-  
A. Fusion of the lower poles of the two kidneys  
B. Kidneys lie lower than normal in position  
C. Kidneys lie higher than normal in position  
D. Lower poles of kidneys are more medial than usual
9. Middle hepatic vein is demarcation between  
A. Medial and lateral part of left lobe of liver  
B. Left and right lobe of liver  
C. Anterior and posterior part of right lobe  
D. Medial and lateral part of right lobe

10. Write of the following is having highest sensitivity for ovarian torsion
  - A. Absent arterial flow
  - B. Absent venous flow
  - C. Free fluid in pelvis
  - D. Enlarged ovary
  
11. The following are signs of a normal gestational sac, except
  - A. Intradecidual sign.
  - B. Cardiac activity seen with a CRL (crown-rump length) of 6 mm.
  - C. Embryo seen with a mean sac diameter of maximum 10 mm.
  - D. Mean sac diameter increases by 1 mm/day.
  
12. For imaging superficial structures, we use:
  - A. Linear probe (6-13Hz)
  - B. Convex probe (6-8Hz)
  - C. Transvaginal probe (4-9)
  - D. None
  
13. Which statement is correct?
  - A. Artefacts are never seen in ultrasound.
  - B. Acoustic shadowing is of no use in ultrasound.
  - C. Twinkling artifact is more sensitive for detection of small stones than acoustic shadowing.
  - D. Fluid filled structures often cause acoustic shadowing.
  
14. Gut signature show all hyperechoic layers except:
  - A. Mucosa
  - B. Submucosa
  - C. Muscularis
  - D. Serosa
  
15. eFAST stands for
  - A. Emergency Focused Assessment with Sonography in Trauma
  - B. Extensive Focused Assessment with Sonography in Trauma
  - C. Exclusive Focused Assessment with Sonography in Trauma
  - D. Extended Focused Assessment with Sonography in Trauma
  
16. Which of the following features is most consistent with focal fatty sparing in liver?
  - A. Avid enhancement of lesion on contrast enhanced ultrasound
  - B. Focal area of increased echogenicity, compared to that of the surrounding liver
  - C. Lesion has geographical margin and is of reduced echogenicity as compared to surrounding liver parenchyma
  - D. Lesion is hypoechoic with vessels displaced around its margins
  
17. A patient came with complain of right upper quadrant pain without any history of fever. An ultrasonography was performed which showed 5cm cystic lesion containing multiple septations and a large central cyst along with multiple small cysts arranged in periphery in liver. Echogenic mobile debris was also seen within the lesion. What is the most likely diagnosis?
  - A. Amoebic lever abscess
  - B. Simple liver cyst
  - C. Pyogenic liver abscess
  - D. Hydatid cyst

18. Transvaginal ultrasound (TVS) was performed on a 36 years old female with dysfunctional uterine bleeding. TVS demonstrated an enlarged globular uterus with heterogenous myometrium, tiny subendometrial cysts, subendometrial echogenic linear striations. On color doppler, speckled pattern of increased vascularity seen within the myometrium. What is the most likely diagnosis?  
A. Endometrial polyposis                      B. Intramural fibroid  
C. Gestational trophoblastic disease      D. Adenomyosis
19. A 42 year old man with known Wegener's granulomatosis develops hematuria. He has abdominal ultrasound which reveals small, smooth kidneys with diffuse parenchymal thinning, pelvicalyceal system appears normal but renal sinus fat is increased. What is the most probable diagnosis?  
A. Bilateral Vesicoureteric reflux              B. Renal tuberculosis  
C. Chronic glomerulonephritis              D. Pyelonephritis
20. A 64 year old female presents with pelvic pain and thus referred for pelvic ultrasonography. On transabdominal scan, a large adnexal mass was seen. Which of the following sonographic findings indicate that this mass is more likely to be malignant than benign?  
A. Doppler waveform with high resistive index ( $> 0.8$ )  
B. Multiple thin septations  
C. Papillary projections  
D. Size  $> 4$ cm
21. A 22 year old woman presents with irregular periods. She was overweight with BMI of 32 and was having excess body hair. Her LH/FSH ratio was elevated. Which one of the following finding is most likely to be present on ultrasound?  
A. Enlarged, edematous ovaries without follicles and pelvic free fluid  
B. Ovaries replaced by multiple large cysts  
C. Enlarged ovaries with multiple peripheral cysts  
D. Ovarian mass with mixed solid and cystic component
22. A pregnant female with gestational age of 9 weeks presents with per vaginal bleeding. On transvaginal ultrasonography, echogenic material measuring approx. 2.1 x 2.4 cm is seen within the endometrial cavity having no flow even on power doppler. What will be your differential diagnosis?  
A. Blood Clots                      B. Fat  
C. Devascularised RPOC              D. Both A and C
23. All of the following are features of Placenta Accreta spectrum except:  
A. Diffuse lacunar flow throughout the placenta  
B. Excessive vascularity around myometrium  
C. Presence of subplacental venous flow  
D. Demonstration of vessels crossing placental myometrial disruption site

24. Sonographic findings of Dandy Walker malformation include all except:
- A. Large posterior fossa
  - B. Normal brain ventricles
  - C. 4<sup>th</sup> ventricle communicating with cisterna magna
  - D. Hypoplastic cerebellar vermis
25. Cerebroplacental ratio is:
- A. Middle cerebral artery PI / Umbilical artery PI
  - B. Umbilical artery PI / Middle cerebral artery PI
  - C. Middle cerebral artery PI / Uterine artery PI
  - D. Middle cerebral artery PSV / Umbilical artery PSV
26. Mesomelia means:
- A. Shortening of proximal segment
  - B. Shortening of middle segment
  - C. Shortening of distal segment
  - D. Shortening of entire limb
27. Which of the following statement is false about piezoelectric crystals:
- A. Converts electrical energy to mechanical energy and vice versa
  - B. Transducers are not affected by temperature
  - C. Lead zirconate titanate is the active element
  - D. None of the above
28. Sonographic measurement taken between the outer edge of occipital bone to the outer margin of skin is called
- A. Nuchal translucency
  - B. Nuchal fold thickness
  - C. Cisterna Magna
  - D. Cerebellar measurement
29. A female aged 30 years came to general physician with flank pain, fever for 5 days. On laboratory investigations bacteriuria and leukocytosis was noted. On ultrasonography, kidney was enlarged in size with loss of corticomedullary differentiation, compression of renal sinuses, focal absence of color flow on doppler in swollen areas. What is the most probable diagnosis?
- A. Acute glomerulonephritis
  - B. Pyonephrosis
  - C. Acute Pyelonephritis
  - D. Renal abscess
30. Sonographic features of necrotizing enterocolitis include:
- A. Bowel wall thickening
  - B. Intramural gas
  - C. Portal vein gas
  - D. All of the above
31. All the following are true regarding the waveform of flow in Ductus Venosus except:
- A. S wave represents Fetal ventricular systole
  - B. A wave represents Fetal Atrial contraction
  - C. A wave is always below the baseline
  - D. D wave represents Fetal early ventricular diastole

32. Dirty shadowing is produced by :  
A. Calcification  
B. Air  
C. Fat  
D. Water.
33. Enhancement occurs deep to a \_\_\_\_\_ attenuating structure  
A. Low  
B. High  
C. Both  
D. None.
34. Endovaginal US is the method of choice for all except:  
A. Monitoring infertility disorder  
B. Abruptio placenta  
C. Diagnosing ectopic pregnancy  
D. Differentiation of normal and abnormal first trimester pregnancy
35. Advantages of the TVS over TAS in evaluation of the female pelvis includes all except:  
A. TVS provides a higher resolution for the evaluation of the normal and abnormal conditions  
B. TVS does not require a distended bladder  
C. TVS can be performed in young, unmarried females  
D. A retroverted uterus is better evaluated with TVS
36. Which of the following statement is false?  
A. Normal fallopian tubes cannot be visualised on pelvic US  
B. Ovaries may not be visualised on routine pelvic US  
C. TVS provides a more detailed examination but a smaller field of view  
D. Sonographic appearance of ovaries is similar at all ages and at different times of a cycle
37. Which of the following statements about pancreatic pseudocyst is false?  
A. These are round or oval fluid collection with a fibrous wall  
B. Spontaneous regression is seen in half the cases approximately  
C. They arise immediately after acute pancreatitis  
D. They may be associated with complications
38. Signs of fetal death are :  
A. Robert's sign  
B. Spalding sign  
C. Hyperflexion of spine  
D. All of the above
39. Trilaminar appearance of normal endometrium is seen in –  
A. Early proliferative phase  
B. Perioovulatory phase  
C. Secretory phase  
D. Menstruating
40. Snowstorm appearance on ultrasound is seen in :  
A. Ectopic pregnancy  
B. Hyaditiform mole  
C. Fibroid  
D. Abortion

41. Best trimester ultrasound for dating of pregnancy is-
- A. First
  - B. Second
  - C. Third
  - D. Post mature
42. 'Starry sky appearance' of liver on USG is seen in?
- A. Steatosis.
  - B. Acute viral hepatitis.
  - C. Passive hepatic congestion
  - D. Lymphoma
43. 'Cluster sign' is seen in?
- A. Amoebic liver abscess
  - B. Pyogenic liver abscess
  - C. Metastasis
  - D. Hepatic candidiasis
44. Regarding ultrasonography of the foetal head and neck, which of the following is not true?
- A. About 50% of patients with a cleft lip and palate will have an associated congenital anomaly
  - B. Hypertelorism can be diagnosed on antenatal ultrasonography
  - C. The lemon sign refers to the shape of the cerebellum in patients with hydrocephalus and spina bifida
  - D. The majority of cases of spina bifida also have Arnold-Chiari type II malformations
45. Which of the following is true regarding the placenta?
- A. Ultrasonography should be performed with a full bladder in order to exclude placenta praevia
  - B. The normal placenta should not measure more than 4 cm at its thickest point
  - C. Painless vaginal bleeding is typical of placental abruption
  - D. An acute retroplacental bleed will appear echopoor on ultrasonography
46. Which of the following statements is not true?
- A. Gartner's duct cysts are typically located anterolateral to the upper two thirds of the vagina
  - B. Nabothian cysts occur in the posterolateral wall of the lower third of the vagina
  - C. The uterus is derived from the paired müllerian ducts
  - D. The risk of an ectopic pregnancy is higher in patients with a unicornuate uterus
47. Complications of twin-twin transfusion syndrome include:
- A. Anencephaly in recipient
  - B. Cardiomegaly in recipient
  - C. Large size donor
  - D. Dilated renal pelvis in donor

48. A 25-year-old woman with 32 weeks' gestation presents with right flank pain. Ultrasound abdomen shows dilatation of the right pelvicalyceal system. Which one of the following additional findings would suggest a diagnosis of mechanical ureteric obstruction rather than pregnancy-related dilatation?
- A. An elevated resistive index (RI)
  - B. Decreased corticomedullary differentiation
  - C. Hyperechoic renal parenchyma
  - D. Renal parenchymal thinning
49. Mirizzi syndrome occurs due to:
- A. Calculus in one of the hepatic duct
  - B. Calculus just proximal to ampulla of Vater
  - C. Calculus in common bile duct
  - D. Impacted calculus in gall bladder neck
50. A 7 year old attended emergency department with 2 day history of pain abdomen and vomiting. He was afebrile with firm palpable mass in the hypogastrium. A supine radiograph showed dilated small bowel loops with large soft tissue mass. On ultrasonography, it was giving target appearance. What will be most likely diagnosis?
- A. Colonic carcinoma
  - B. Gall stone ileus
  - C. Intussusception
  - D. Psoas abscess

**SECTION - B**

**Short Questions**

Q.1 Describe in brief ultrasound findings of benign and malignant ovarian masses.

Q.2 Briefly discuss differential diagnoses and US findings of right iliac fossa pain in a female patient.

Q.3 Briefly discuss differential diagnoses and US findings of right upper quadrant pain.

Q.4 How will you assess chorionicity and amnionicity in case of twin/multiple pregnancies?

Q.5 Causes of bleeding PV in first trimester and their ultrasonography appearances

- Q.6 Enumerate five common causes of Fetal intra-abdominal cystic lesions. Describe their ultrasound features.

Q.7 What is Oligohydramnios? Enumerate its five common causes. Write its two complications.

Q.8 What is Fetal biophysical profile score (BPS or BPP). Discuss its different variables.

Q.9 Gestational trophoblastic neoplasia

Q.10 Cyclic changes in endometrium

SPACE FOR ROUGH WORK

**ANSWER KEY OF COMPETENCY BASED ASSESSMENT TEST  
(SIX MONTHS ULTRASOUND TRAINING RULES AS PER PC-PNDT ACT, 2014  
EXAM HELD ON 28.06.2022**

<b>SET-D</b>							
1	A	14	C	27	B	40	B
2	B	15	D	28	B	41	A
3	C	16	C	29	C	42	B
4	C	17	D	30	D	43	B
5	D	18	D	31	C	44	C
6	A	19	C	32	B	45	B
7	A	20	C	33	A	46	B
8	C	21	C	34	B	47	B
9	B	22	D	35	C	48	A
10	B	23	C	36	D	49	D
11	C	24	B	37	C	50	C
12	A	25	A	38	D		
13	C	26	B	39	B		