1. Describe the embryology of the urinary bladder. 10

2. a. Describe the anatomy of the adrenal gland. 4+6
   b. Draw a diagram showing the steps in production of adrenal cortical hormones.

3. Outline the mechanism of sacral neuromodulation in bladder dysfunction. 10

4. a. Enumerate contrast agents used in urologic imaging. 3+3+4
   b. Describe etiology and prevention of nephrogenic systemic fibrosis.
   c. Discuss precautions to be taken before using iiodinated contrast media intravenously.

5. a. What is post obstructive diuresis? 4+6
   b. What are the principles in managing it?

6. Classify oral agents used in the management of erectile dysfunction. Describe the role of non-PDE5 inhibitor oral drugs in managing erectile dysfunction. 5+5

7. a. What is complicated UTI? 3+7
   b. Outline the management of asymptomatic bacteruria in pregnancy.

8. a. List the types and principle of various extracorporeal shock wave lithotripsy generators. 4+3+3
   b. What is spalling?
   c. What is super-focusing?

9. Describe the principles and steps taken in renal preservation prior to a kidney transplant. 10

10. a. Describe the pathologic findings in renal tuberculosis 5+5
    b. Briefly describe the mechanism of action of five important anti-tubercular drugs.

POSSESSION/USE OF CELL PHONES OR ANY SUCH ELECTRONIC GADGETS IS NOT PERMITTED INSIDE THE EXAMINATION HALL
1. Describe the role of BCG in superficial bladder transitional cell carcinoma. What are the steps taken to minimize its complications?

2. a. Define an algorithm for evaluation of antenatally detected hydronephrosis-bilateral in a male fetus.
   b. What is the current role of pre-natal surgical intervention in such fetuses?

3. a. Describe the complications specific to the laparoscopic approach in performing a left radical nephrectomy.
   b. Draw a diagram for post-placement for a transperitoneal left laparoscopic radical nephrectomy with the patient in the lateral position.

4. a. What are the surgical options for managing a pan-anterior urethral inflammatory stricture?
   b. Which of these options should be avoided in a patient with balanitis xerotica obliterans?

5. a. Describe the metabolic evaluation recommended in a 30 years old, first time renal stone former.
   b. What additional investigations would be required if the patient was 5 years old?

6. a. How would you diagnose a ureteric injury in the first few post-operative days after an abdominal hysterectomy?
   b. What is the algorithm for managing such injuries?

7. a. What are the causes of bleeding during a PCNL?
   b. How can such bleeding be prevented?
   c. How would you manage persistent hematuria 6 days after a PCNL?

8. a. What is organ preserving management of penile cancer?
   b. Which patients are most suitable for these approaches?

9. What are the various problems in using PSA as a screening tool for prostate cancer?

10. What is the role of stents in the management of BPH

POSSESSION/USE OF CELL PHONES OR ANY SUCH ELECTRONIC GADGETS IS NOT PERMITTED INSIDE THE EXAMINATION HALL
1. a. What is optical coherence tomography?  
b. What is its potential role in managing bladder carcinoma?  

2. a. What is the mechanism of action of botulinum toxin?  
b. What are the indications for its use in Urology?  
c. What is the dose and method of administration for the above indications?  

3. a. What are the recent advances in renal preservations during surgical management of renal cell carcinoma?  
b. What is the role of neo-adjuvant sunitinib in promoting renal preservation?  

4. a. What are the principles of tissue engineering?  
b. What is the status of tissue engineering in managing urologic diseases?  

5. What are the various strategies used to improve the quality of life in men with small-volume, muscle invasive transitional cell carcinoma of urinary bladder?  

6. What are the genetic causes of male infertility? Enumerate and classify.  

7. a. Describe the types of penile-prosthesis used in managing erectile dysfunction.  
b. What are bio-films with regards to urologic prostheses?  

8. a. What are nano-bacteria?  
b. What is their role in urolithiasis?  

9. a. What is a ‘Green Light’ Laser?  
b. What is its mode of action on BPH?  

10. Briefly outline the management of a patient who presents to the emergency after a road traffic crash with hematuria.  

****