

# Unit 6 - Week 4

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## Assignment 4

The due date for submitting this assignment has passed. **Due on 2019-09-25, 23:59 IST.**  
As per our records you have not submitted this assignment.

1) Which of the following represent/(s) challenges of rural healthcare diagnostics? 1 point

a) Affordability

b) Accessibility

c) Lack of skilled manpower

d) All of the above

☐ a.

☐ b.

☐ c.

☐ d.

No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
d.

2) 1 point

OOCs can provide:

i) Mechanistic studies of drug action

ii) Preclinical trials of drug toxicity and efficacy

iii) Clinical studies using patient-specific OOCs for models of patient diversity,

iv) The development of a “clinical-trial-on-a-chip” to discover therapeutic options for rare diseases.

a) Only i and ii

b) i, ii and iii

c) Only iv

d) All of the above

☐ a.

☐ b.

☐ c.

☐ d.

No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
d.

3) 0 points

Applications of Droplet PCR include:

a. Measurement of copy number variation in genetically modified organisms

b. Prenatal fetal karyotyping

c. Protein expression in human disease models

d. Epigenetic control of gene expression in cancer, gene amplification in cancer, detection of rare sequence variants

☐ a.

☐ b.

☐ c.

☐ d.

No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
c.

4) A liquid biopsy: 1 point

a) Is a non-invasive process

b) Enables retrieval of information about a tumor from blood

c) None of the above

d) Both a and b

☐ a.

☐ b.

☐ c.

☐ d.

No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
d.

5) Which of the following is true regarding the use of Point-of-care diagnostic devices? 1 point

a) These devices, in general, are very costly.

b) These devices require skilled manpower

c) These devices provide rapid detection

d) None of the above.

☐ a.

☐ b.

☐ c.

☐ d.

No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
c.

6) 0 points

Disadvantage of PCR on microfluidic platform?

a. Microfluidic devices offer rapid heat transfer.

b. The small volumes reduce sample and reagent consumption,

c. In microscale systems diffusive mass transport and heat conduction are slower due to the characteristic length scale of the system and easier to control than microscale system.

d. Both a and b

☐ a.

☐ b.

☐ c.

☐ d.

No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
d.

7) 1 point

What is the correct sequence of operational steps of a health kiosk?

a) Patient approaches clinic ->Doctor records demographic data and issues prescription-> Health assistant explains prescription to patient-> exit interview

b) Patient approaches clinic -> Health assistant records demographic data-> doctor is connected over phone and prescription is issued-> payment is taken from the patient->exit interview

c) Patient approaches clinic -> Health assistant issues prescription-> payment is taken from the patient->exit interview

d) Patient approaches clinic ->doctor is connected over phone and prescription is issued-> Health assistant records demographic data -> exit interview

☐ a.

☐ b.

☐ c.

☐ d.

No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
b.

8) 1 point

Capture efficiency for using microstructures is

a. Highest for equally spaced row and column s with and show minimal clogging

b. Lowest for lower column spacing and higher row spacing and show minimal clogging

c. Highest for higher column spacing and lower row spacing and show minimal clogging

d. None of the above

☐ a.

☐ b.

☐ c.

☐ d.

No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
d.

9) 1 point

What is the correct sequence for fabrication of paper-based channels using inkjet printing?

a) Single-sided printing of the design on paper → Heating the paper on a hot plate

b) Double sided printing of the design on paper → Heating the paper on a hot plate

c) Preheating the paper on a hot plate → Single sided printing of design on the paper

d) None of the above.

☐ a.

☐ b.

☐ c.

☐ d.

No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
b.

10) 1 point

Which is not true for monoclonal and polyclonal antibodies?

a. Polyclonal antibody is produced by different clones of plasma B cells against the different epitopes

b. Monoclonal antibodies are produced by single clone of plasma B cells against a single epitope of the antigen

c. Some cross reactions with monoclonaal antibodies (MAbs) can occur.

d. All of the above

☐ a.

☐ b.

☐ c.

☐ d.

No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
c.

11) 1 point

Why do we need integration of several OOCs?

a) Organ systems communicate by secreting soluble factors and extracellular vesicles that mediate peripheral crosstalk with the circulatory system

b) Inter-organ connections enable cross- talk between organs of interest and facilitate a more physiological approach to drug delivery and uptake

c) Connecting individual OOCs to one another enables control over the culture environment to recapitulate some aspects of homeostasis.

d) All of the above

☐ a.

☐ b.

☐ c.

☐ d.

No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
d.