GATE Questions 16

EE24BTECH11012 - Bhavanisankar G S

1) The untimely loss of life is a cause of serious global concern as thousands of people get killed _ accidents every year while many others die _ diseases like cardio-vascular disease, cancer etc.

a) in, of
b) from, of
c) during, from
d) from, from

2) He was not only accused of theft _ of conspiracy.

a) rather
b) but also
c) but even
d) rather than

3) Select the word that fits the analogy :
Explicit : Implicit :: Express : _

a) impress
b) repress
c) compress
d) suppress

4) The Canadian constitution requires that equal importance be given to English and French. Lat year, Air Canada lost a lawsuit, and had to pay a six-figure fine to a Frenchspeaking couple after they filed complaints about formal in-flight announcements in English lasting 15 seconds, as opposed to informal 5 second messages in French.
The French-speaking couple were upset at
a) the in-flight announcements being made in English.
b) the English announcements being clearer than the French ones.
c) the English announcements being longer than the French ones.
d) equal importance being given to English and French.

5) A superadditive function $f()$ satisfies the following property

$$f(x_1 + x_2) \geq f(x_1) + f(x_2)$$

Which of the following functions is a superadditive function for $x \geq 1$?

a) e^x
b) $\sqrt{x}$
c) $\frac{1}{x}$
d) e^{-x}

6) The global financial crisis in 2008 is considered to be the most serious world-wide financial crisis, which started with the subprime lending crisis in USA in 2007. The sub-prime lending crisis led to the banking crisis in 2008 with the collapse of Lehman Brothers in 2008. The sub-prime lending refers to the provision of loans to those borrowers who may have difficulties in repaying loans, and it arises because of excess

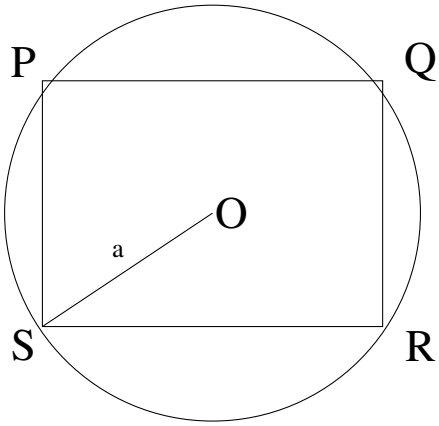
liquidity following the East Asian crisis.
Which one of the following sequences shows the correct precedence as per the given passage ?

a) East Asian crisis → sub-prime lending crisis → banking crisis → global financial crisis
b) Sub-prime lending crisis → global financial crisis → banking crisis → East Asian crisis
c) Banking crisis → sub-prime lending crisis → global financial crisis → East Asian crisis
d) Global financial crisis → East Asian crisis → banking crisis → sub-prime lending

7) It is quarter past three in your watch. The angle between the hour hand and the minute hand is _

a) 0° b) 7.5° c) 15° d) 22.5°

8) A circle with centre O is shown in the figure. A rectangle PQRS of maximum possiblr area is inscribed in the circle. If the radius of the circle is a, then the area of the outer portion is _



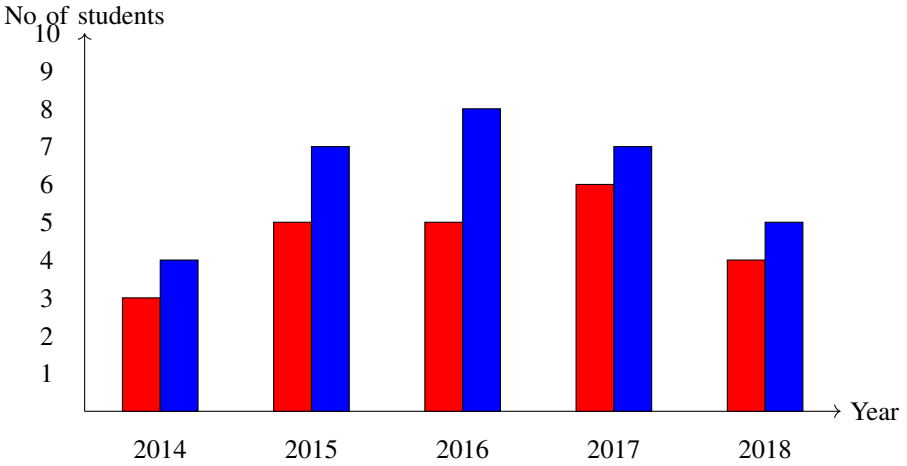
a) $\pi a^2 - a^2$
b) $\pi a^2 - \sqrt{2}a^2$
c) $\pi a^2 - 2a^2$
d) $\pi a^2 - 3a^2$

9) $a, b$and$c$ are real numbers. The quadratic equation $ax^2 + bx + c = 0$ has equal roots, which is β, then

a) $\beta = \frac{b}{a}$
b) $\beta^2 = ac$
c) $\beta^3 = \frac{bc}{2a^2}$
d) $b^2 \neq 4ac$

10) The following figure shows the data of students enrolled in 5 years (2014 to 2018) for two schools P and Q. During this period, the rario of the average number of

the srudets enrolled in school P to the average of the difference of the number of students enrolled in schools P and Q is _



a) 8:23 b) 23:8 c) 23:31 d) 31:23

11) For $f(x) = |x|$ with $\frac{df}{dx}$ denoting the derivative, the mean value theorem is not applicable because
   a) $f(x)$ is not continuous at $x = 0$
   b) $f(x) = 0$ at $x = 0$
   c) $\frac{df}{dx}$ at $x = 0$
   d) $\frac{df}{dx}$ is not defined at $x = 0$

12) For the function $f(x) = \frac{e^{-\lambda}}{2\sigma^2\sqrt{2\pi}}$, where$\lambda = \frac{1}{2\sigma^2}(x-\mu)^2$, and σ and μ are constants, the maximum occurs at

a) $x = \sigma$ b) $x = \sigma\sqrt{2\pi}$ c) $x = 2\sigma^2$ d) $x = \mu$

13) $y = Ae^{mx} + Be^{-mx}$, where $A, B$and$m$ are consttants, is a solution of

a) $\frac{d^2y}{dx^2} - m^2y = 0$
b) $A\frac{d^2y}{dx^2} + m^2y = 0$
c) $B\frac{d^2y}{dx^2} + Ay = 0$
d) $\frac{d^2y}{dx^2} + my = m^2$