	The Bodwad Sarvajanik Co-Op. Education Society Ltd., Bodwad **Arts, Commerce and Science College Bodwad** **<u>Question Bank</u>** **Class:- FYBSc** **Sem:- II** **Subject:** MTH 203 (A): Laplace Transform **Paper Name:-** MTH 203(A)	
Sr. No.	Questions	**Ans**
1)	Find $L\{e^{7t}\} = \ldots$ **[A]** $\frac{1}{s-7}$ **[B]** $\frac{1}{sk}$ **[C]** 0 **[D]** $\frac{1}{t-k}$	**A**
2)	Find $L\{\sin(kt)\} = \ldots$ **[A]** $\frac{k}{t^2+k^2}$ **[B]** $\frac{k}{s^2+k^2}$ **[C]** $\frac{s}{s^2+k^2}$ **[D]** $\frac{k}{s^2-k^2}$	**B**
3)	Choose the correct option. If $L\{F(t)\} = f(s)$, then $L\{e^{at}F(t)\} = \ldots$ **[A]** $f(t-a)$ **[B]** $f(t+a)$ **[C]** $f(s-a)$ **[D]** $f(s)$	**C**
4)	Choose the correct option. If $L\{F(t)\} = f(s)$, then $L\{F(at)\} = \ldots$ **[A]** $\frac{1}{a}f(\frac{t}{a})$ **[B]** $f(\frac{s}{a})$ **[C]** $\frac{1}{a}f(\frac{s}{a})$ **[D]** $af(\frac{s}{a})$	C
5)	Choose the correct option. If $L\{F(t)\} = f(s)$, then $L\{\int_0^t F(t)dt\} = \ldots$ **[A]** $\frac{f(s)}{t}$ **[B]** $\frac{f(t)}{t}$ **[C]** $\frac{f(s)}{s}$ **[D]** sf(s)	C
6)	Find $L\{\sin h(kt)\} = \ldots$ **[A]** $\frac{k}{s^2+k^2}$ **[B]** $\frac{s}{s^2-k^2}$ **[C]** $\frac{t}{s^2-k^2}$ **[D]** $\frac{k}{s^2-k^2}$	**D**

7)	Find $L\{\cosh(kt)\} =$... **[A]** $\frac{s}{s^2-k}$ **[B]** $\frac{t}{s^2-k^2}$ **[C]** $\frac{s}{s^2-k^2}$ **[D]** $\frac{s}{s^2+k^2}$	**C**
8)	Find $L\{\cos(kt)\} =$... **[A]** $\frac{s}{s^2-k^2}$ **[B]** $\frac{k}{s^2-k^2}$ **[C]** $\frac{s}{s^2+k^2}$ **[D]** $\frac{s}{s^2-k}$	C
9)	Choose the correct option. If $L\{F(t)\} = f(s)$,then $\boldsymbol{L\{tF(t)\}} =$. .. **[A]** $\frac{d^2 f(s)}{ds^2}$ **[B]** f(s) **[C]** $\frac{-d f(s)}{ds}$ **[D]** $s^2F(t)$	**C**
10)	Choose the correct option. If $L\{F(t)\} = f(s)$, then $\boldsymbol{L\{t^2F(t)\}} =$. .. **[A]** $\frac{d^2 f(s)}{ds^2}$ **[B]** $\frac{\boldsymbol{d} f(s)}{d\boldsymbol{s}}$ **[C]** f(s) **[D]** $s^2F(t)$	**A**
11)	**Find** $\boldsymbol{L(\sin t - \cos t)^2 = \cdots}$ **[A]** $\frac{1}{s} - \frac{2}{s^2+4}$ **[B]** sin(s)-cos(s) **[C]** $\frac{1}{s} + \frac{2}{s^2+4}$ **[D]** $\frac{5}{s} - \frac{2}{s^2+4}$	A
12)	Let F(t) is function of t,t>0 . Then $L\{F(t)\} =$. .. **[A]** $\int_0^\infty e^{-st}F(t)dt$ **[B]** $\int_0^\infty e^{st}F(t)dt$ **[C]** $\int_0^\infty e^{-st}F(s)ds$ **[D]** $F(s)$	**A**
13)	**Find** $\mathbf{L\{t^2e^{2t}\}} =$. .. **[A]** $\frac{2}{(s-2)^3}$ **[B]** $\frac{1}{(s-2)^3}$ **[C]** $\frac{2}{(s-2)^2}$ **[D]** $\frac{1}{(s-2)^4}$	**A**
14)	**Find** $\mathbf{L\{t^3e^{-3t}\}} =$. .. **[A]** $\frac{4!}{(s+3)^4}$ **[B]** $\frac{3!}{(s+3)^4}$ **[C]** $\frac{3!}{(s+3)^3}$ **[D]** $\frac{3!}{(s+3)^2}$	**B**

15)	Choose the correct option. If $L\{F(t)\} = \mathrm{f(s)}$, then $L\{e^{-at}F(t)\} =$... **[A]** $e^{-as}\mathrm{f(s+a)}$ **[B]** $e^{as}\mathrm{f(s+a)}$ **[C]** $e^{-as}\mathrm{f(s-a)}$ **[D]** $\mathrm{f(s+a)}$	**D**
16)	**Choose the correct option.If $L\{F(t)\} = f(s)$.Then $L^{-1}\{f(s)\} =$...** **[A]** F(s) **[B]** f(s) **[C]** F(t-1) **[D]** F(t)	**D**
17)	Find $L^{-1}\{\frac{1}{s^{n+1}}\} =\dots$ **[A]** $\frac{t^n}{\Gamma(n)}$ **[B]** $\frac{s^n}{\Gamma(n)}$ **[C]** $\frac{t^n}{\Gamma(n-1)}$ **[D]** $\frac{t^n}{\Gamma(n+1)}$	**D**
18)	Find $L^{-1}\{\frac{1}{s-k}\} =\dots$ **[A]** e^{kt} **[B]** sin kt **[C]** coskt **[D]** e^{-kt}	**A**
19)	Find $L^{-1}\{\frac{1}{s^2+k^2}\} =\dots$ **[A]** $\frac{coskt}{k}$ **[B]** $\frac{sinkt}{k}$ **[C]** $\frac{sinkt}{t}$ **[D]** $\frac{sinkt}{s}$	**B**
20)	Find $L^{-1}\{\frac{s}{s^2+k^2}\} =\dots$ **[A]** sin(kt) **[B]** tan(kt) **[C]** cot(kt) **[D]** cos(kt)	**D**
21)	Find $L^{-1}\{\frac{1}{s^2-k^2}\} =\dots$ **[A]** tan(kt) **[B]** $\frac{sinhkt}{k}$ **[C]** $\frac{sinkt}{k}$ **[D]** $\frac{coshkt}{k}$	**B**
22)	Find $L^{-1}\{\frac{s}{s^2-k^2}\} =\dots$ **[A]** $\frac{sinkt}{k}$ **[B]** $\frac{coskt}{k}$ **[C]** $\frac{sinks}{k}$ **[D]** $coshkt$	**D**

23)	**Find** $\mathbf{L^{-1}\{\frac{3}{s+4}\}}$**=…** **[A]** $4e^{-3t}$ **[B]** $3e^{4t}$ **[C]** $3+e^{-4t}$ **[D]** $3e^{-4t}$	**D**
24)	**Find** $\mathbf{L^{-1}\{\frac{1}{s^5}\}}$**=…** **[A]** $\frac{t^5}{24}$ **[B]** $\frac{t^4}{5!}$ **[C]** $\frac{s^4}{24}$ **[D]** $\frac{t^4}{24}$	**D**
25)	**If** $\mathbf{L^{-1}\{f(s)\} = F(t)}$**.Then** $\mathbf{L^{-1}\{f(s-k)\}}$**=…** **[A]** $e^{kt}F(t-k)$ **[B]** $e^{kt}F(t)$ **[C]** $e^{kt}F(t+k)$ **[D]** $e^{ks}F(t)$	**B**
26)	**If** $\mathbf{L^{-1}\{f(s)\} = F(t)}$**.Then** $\mathbf{L^{-1}\{f(s+k)\}}$**=…** **[A]** $e^{kt}F(t)$ **[B]** $e^{-kt}F(t)$ **[C]** $e^{-kt}F(t-k)$ **[D]** $e^{-kt}F(t+k)$	**B**
27)	**If** $\mathbf{L^{-1}\{f(s)\} = F(t)}$**.Then** $\mathbf{L^{-1}\{f^{(n)}(s)\}}$**=…** **[A]** $t^nF(t)$ **[B]** $F(t)$ **[C]** $(-1)^nt^nF(t)$ **[D]** 0	**C**
28)	**If** $\mathbf{L^{-1}\{f(s)\} = F(t)}$**.Then** $\mathbf{L^{-1}\{\int_s^\infty f(u)du\}}$**=…** **[A]** F(s) **[B]** $\frac{F(t)}{t}$ **[C]** $\frac{F(s)}{t}$ **[D]** tf(s)	**B**
29)	**If** $\mathbf{L^{-1}\{f(s)\} = F(t)}$**.Then** $\mathbf{L^{-1}\{f(ks)\}}$**=…** **[A]** $\frac{1}{k}f(\frac{t}{k})$ **[B]** $F(\frac{t}{k})$ **[C]** $\frac{1}{k}F(\frac{t}{k})$ **[D]** $kF(kt)$	**C**
30)	**If** $\mathbf{L^{-1}\{f(s)\} = F(t)}$ $\boldsymbol{and\ F(0)=0}$**,Then** $\mathbf{L^{-1}\{sf(s)\}}$**=…** **[A]** **[B]** **[C]** **[D]** $F'(t)$	**D**

31)	F(t)=sin(t) is periodic function of period … **[A]** $\frac{\pi}{2}$ **[B]** 2π **[C]** π **[D]** $\frac{3\pi}{2}$	**B**
32)	**Let F(t) be a periodic function of period T.Then L{F(t)}=…** **[A]** 0 **[B]** $\frac{1}{1+e^{-sT}}\int_0^T e^{-st}F(t)dt$ **[C]** T **[D]** $\frac{1}{1-e^{-sT}}\int_0^T e^{-st}F(t)dt$	**D**
33)	**Using Convolution Theorem ,**$\boldsymbol{L^{-1}\left[\frac{1}{(s+3)(S-1)}\right]} = \cdots$ **[A]** $\int_0^t e^{3u}.e^{t-u}du$ **[B]** $\int_0^t e^{-3u}.e^{t-u}du$ **[C]** $\int_0^S e^{3u}.e^{t-u}du$ **[D]** 1	**B**
34)	**1*1=…** **[A]** t **[B]** 1 **[C]** $\frac{1}{2}$ **[D]** 0	**A**
35)	1*1*1=… **[A]** $\frac{t^2}{2}$ **[B]** s **[C]** s^3 **[D]** t^3	**A**
36)	**Using Convolution Theorem,** $\mathbf{L^{-1}[\frac{1}{(s^2+1)}.\frac{S}{s^2+1}]}$**=…** **[A]** $\int_0^S sin(u)cos(t-u)du$ **[B]** 1 **[C]** π **[D]** $\int_0^t sin(u)cos(t-u)du$	**D**
37)	**Using Convolution Theorem ,** $\mathbf{L^{-1}[\frac{1}{(s+1)}.\frac{1}{s^2+1}]}$ **=…** **[A]** $sin(t) * e^t$ **[B]** $cos(t) * e^{-t}$ **[C]** π **[D]** $sin(t) * e^{-t}$	**D**
38)	**Using Convolution Theorem,** $\mathbf{L^{-1}[\frac{1}{s}.\frac{1}{s^2+1}]}$ **=…** **[A]** 1*cos(t) **[B]**cos(t) **[C]** 1*sin(t) **[D]** $sin(t) * e^{-t}$	**C**

39)	**Using Convolution Theorem,** $\mathbf{L^{-1}}[\frac{s^2}{(s^2+a^2)(s^2+b^2)}] = \ldots$ **[A]** $sin(t) * e^{-t}$ **[B]** $cos(t) * e^{-t}$ **[C]** 1 **[D]** cos(at)*cos(bt)	**D**
40)	Using partial fractions ,$L^{-1}\{\frac{1}{s^2+2s+1}\} = \ldots$ **[A]** e^{-t} **[B]** $e^{-t}cos(t)$ **[C]** $e^{-s}sin(s)$ **[D]** $e^{-t}sin(t)$	**D**
41)	Using partial fractions ,$L^{-1}\{\frac{1}{s^2+2s+5}\} = \ldots$ **[A]** $e^{-t}\frac{cos(2t)}{2}$ **[B]** $e^{t}\frac{sin(2t)}{2}$ **[C]** s **[D]** $e^{-t}\frac{sin(2t)}{2}$	**D**
42)	Find $L^{-1}\{\frac{-2s+1}{s^2+1}\} = \ldots$ **[A]** cos(t) **[B]** -2cos(t)+sin(t) **[C]** sin(t) **[D]** -2sin(t)+cos(t)	**B**
43)	Find $L^{-1}\{\frac{7s-1}{s^2+1}\} = \ldots$ **[A]** 0 **[B]** 7cos(t)-sin(t) **[C]**8 **[D]** 7sin(t)-cos(t)	**B**
44)	**Using Convolution Theorem** ,$\mathbf{L^{-1}}[\frac{1}{(s)((s-1)^2)}] = \ldots$ **[A]** $1 * e^t$ **[B]** $1 * e^{-t}$ **[C]** $1 * e^t(t-1)$ **[D]** $1 * e^t t$	**D**
45)	**Using Convolution Theorem,** $\mathbf{L^{-1}}[\frac{1}{(s^2)((s+1)^2)}] = \ldots$ **[A]** s **[B]** s*se^{-s} **[C]**$t * te^{-t}$ **[D]** s^2	**C**
46)	If L{Y(t)}=y(s),Find Laplace Transform of Differential Equation $\frac{d^2Y}{dt^2} + Y = 0$ with $Y'(0) = 0$. **[A]** y(s)=1 **[B]**Y(t)=0 **[C]**Y(t)=cos(t)**[D]** $(s^2+1)y(s) - sY(0) = 0$	**D**

47)	If L{Y(t)}=y(s),Find Laplace Transform of Differential Equation $\frac{d^2Y}{dt^2}+9Y=1$ with initial conditions Y(0)=0,$Y'(0)=0$. **[A]**y(s)=0 **[B]** $(s^2+9)Y(s)=\frac{1}{s}$ **[C]** $(s^2+9)y(s)=1$ **[D]** $(s^2+9)y(s)=\frac{1}{s}$	**D**
48)	If L{Y(t)}=y(s),Find Laplace Transform of Diff. Equation $\frac{d^2Y}{dt^2}-2\frac{dY}{dt}+2Y=0$ with initial conditions $Y(0)=Y'(0)=1$. **[A]**$s^2y(s)-2sy(s)=0$ **[B]**y(s)=1 **[C]** $(s^2-2s+2)y(s)=s-1$ **[D]** Y(s)	**C**
49)	If L{Y(t)}=y(s),Solution of Diff. Equation $\frac{d^2Y}{dt^2}-2\frac{dY}{dt}+2Y=0$ with initial conditions $Y(0)=Y'(0)=1$.using Laplace Transform. **[A]** e^tsin(t) **[B]** e^tcos(t) **[C]** e^{-t}cos(t) **[D]** e^{-t}	**B**
50)	If L{Y(t)}=y(s),Find Laplace Transform of Diff. Equation $\frac{d^2Y}{dt^2}+Y=t$ with initial conditions $Y(0)=1, Y'(0)=0$. **[A]** y(s)=sin s **[B]** $(s^2+1)y(s)=\frac{1}{s^2}+s$ **[C]** 0 **[D]** y(s)=cos(s)	**B**
51)	Find $L\{U(t-a)\}=\ldots$ **[A]** $\frac{e^{as}}{s}$ **[B]** 0 **[C]** $\frac{e^{-as}}{s}$ **[D]** 1	**C**
52)	If L{F(t)} = f(s) Find $L\{F(t-a)U(t-a)\}=\ldots$ **[A]** e^{as}f(s) **[B]** e^{-as}+f(s) **[C]** e^{-as}f(s) **[D]** f(s)	**C**
53)	Choose the correct option.$L\{\delta(t)\}=\ldots$ **[A]** 0 **[B]** -1 **[C] s** **[D]** 1	**D**
54)	Choose the correct option.$L\{F(t)\delta(t-a)\}=\ldots$ **[A]** $e^{-as}F(a)$ **[B]** 1 **[C]** F(a) **[D]** e^{-as}	**A**

55)	Choose the correct option.$L\{\delta(t-a)\} =\ldots$ **[A]** e^{-as} **[B]** 1 **[C]** e^{as} **[D]** $1+e^{-as}$	**A**
56)	Choose the correct option.$L\{F(t)\delta(t)\} =\ldots$ **[A]** F(0) **[B]** 1 **[C]** F(1) **[D]** f(s)	**A**
57)	Find $L\{sin(2t)\delta(t-2)\} =\ldots$ **[A]** e^{-2s}sin(4) **[B]** e^{2s}sin(4) **[C]** e^{-2s}sin(4s) **[D]** sin(4)	**A**
58)	Find $\int_0^\infty e^{-4t}\,\delta(t-2)dt =\ldots$ **[A]** e^{-4t} **[B]** 1 **[C]** e^{-8} **[D]** e^{8}	**C**
59)	Find $L\{t^3\delta(t-2)\} =\ldots$ **[A]** $8e^{-2s}$ **[B]** $8e^{-2t}$ **[C]** s^3 **[D]** 1	**A**
60)	Find $L\{t^2\delta(t-4)\} =\ldots$ **[A]** $16e^{-4s}$ **[B]** 0 **[C]** t^2 **[D]** $4s^2$	**A**
61)	If $F(t)$ is function of $t,(t>0)$ then $L[F(t)]$ is A) $\int_0^\infty e^{st}f(t)dt$ **B)** $\int_0^\infty e^{-st}f(t)dt$ C) $\int_t^\infty e^{-st}f(t)dt$ D) $\int_0^\infty e^{t}f(t)dt$	**B**
62)	If $F(t)=1$ then $L[1]$ is equal to $A)s\,,s>0$ B) $\frac{1}{s}\,,s>0$ C) $\frac{1}{s^2}\,,s>0$ D) $1\,,s>0$	**B**

63)	If $F(t) = e^{at}, a > 0$ then $L[e^{at}]$ is equal to A) $\frac{1}{s}, s > 0$ B) $\frac{1}{(s+a)}, s > a$ C) $\frac{1}{(s-a)}, s > a$ D) $\frac{s}{(s+a)}, s > a$	**C**
64)	If $F(t) = e^{-at}, a > 0$ then $L[e^{-at}]$ is equal to A) $\frac{1}{s}, s > 0$ B) $\frac{1}{(s+a)}, s > a$ C) $\frac{1}{(s-a)}, s > a$ D) $\frac{s}{(s+a)}, s > a$	**B**
65)	If F$(t) = t$, then $L[t]$ is equal to A) $\frac{1}{s^2}, s > 0$ B) $\frac{1}{(s)}, s > a$ C) $\frac{1}{(s-a)}, s > a$ D) $\frac{s}{(s+a)}, s > a$	**A**
66)	If F$(t) = t^n$, then $L[t^n]$ is equal to A) $\frac{n!}{s^{n+1}}, s > 0$ B) $\frac{1}{s^n}, s > 0$ C) $\frac{1}{(s-a)}, s > 0$ D) $\frac{s}{(s+a)}, s > a$	**A**
67)	If F$(t) = \sin at$, $a > 0$ then $L[\sin at]$ is equal to A) $\frac{s}{s^2+a^2}, s > 0$ B) $\frac{a}{s^2-a^2}, s > \lvert a \rvert$ C) $\frac{1}{s^2+a^2}, s > -a$ D) $\frac{a}{s^2+a^2}, s > 0$	**D**
68)	If $f(t) = \sin 2t$, then $L[\sin 2t]$ is equal to A) $\frac{s}{s^2+4}, s > 0$ B) $\frac{2}{s^2-4}, s > \lvert 2 \rvert$ C) $\frac{1}{s^2+4}, s > -2$ D) $\frac{2}{s^2+4}, s > 0$	**D**
69)	If $f(t) = \sin 3t$, then $L[\sin 2t]$ is equal to A) $\frac{s}{s^2+4}, s > 0$ B) $\frac{2}{s^2-4}, s > \lvert 2 \rvert$ C) $\frac{1}{s^2+4}, s > -2$ D) $\frac{3}{s^2+9}, s > 0$	**D**
70)	If $f(t) = \cos at$, $a > 0$ then $L[\cos at]$ is equal to A) $\frac{s}{s^2+a^2}, s > 0$ B) $\frac{a}{s^2-a^2}, s > \lvert a \rvert$ C) $\frac{1}{s^2+a^2}, s > -a$ D) $\frac{a}{s^2+a^2}, s > 0$	**A**

71)	If $f(t) = \cos\sqrt{2}t$, then $L\left[\cos\sqrt{2}t\right]$ is equal to A) $\frac{s}{s^2+4}$, $s > 0$ B) $\frac{a}{s^2-a^2}$, $s > \|a\|$ C) $\frac{s}{s^2+2}$, $s > 0$ D) $\frac{\sqrt{2}}{s^2+2}$, $s > 0$	**C**
72)	If $f(t) = \sin\sqrt{2}t$, then $L\left[\sin\sqrt{2}t\right]$ is equal to A) $\frac{s}{s^2+4}$, $s > 0$ B) $\frac{a}{s^2-a^2}$, $s > \|a\|$ C) $\frac{s}{s^2+2}$, $s > 0$ D) $\frac{\sqrt{2}}{s^2+2}$, $s > 0$	**D**
73)	If $f(t) = \sinh at$, $a > 0$ then $L[\sinh at]$ is equal to A) $\frac{s}{s^2+a^2}$, $s > 0$ B) $\frac{a}{s^2-a^2}$, $s > \|a\|$ C) $\frac{1}{s^2+a^2}$, $s > -a$ D) $\frac{a}{s^2+a^2}$, $s > 0$	**B**
74)	$L[e^{at} + 5]$ is equal to A) $\frac{1}{s+\log 4} + \frac{5}{s}$ B) $\frac{1}{s-a} + \frac{5}{s}$ C) $\frac{4}{s^2} + \frac{5}{s}$ D) $\frac{1}{s-4} + \frac{5}{s}$	**B**
75)	$L[e^{2at} + 15]$ is equal to A) $\frac{1}{s+\log 4} + \frac{5}{s}$ B) $\frac{1}{s-2a} + \frac{15}{s}$ C) $\frac{4}{s^2} + \frac{5}{s}$ D) $\frac{1}{s-4} + \frac{5}{s}$	**B**
76)	If $L\left[\frac{\sin t}{t}\right] = \tan^{-1}\frac{1}{s}$ then $L\left[\frac{\sin at}{t}\right]$ is equal to A) $\tan^{-1}\frac{a}{s}$ B) $\frac{1}{a}\tan^{-1}\frac{a}{s}$ C) $\tan^{-1}\frac{1}{as}$ D) a $\tan^{-1}\frac{a}{s}$	**A**
77)	$L^{-1}\left[\frac{3s-12}{s^2+8}\right]$ is equal to A) $\cos 2\sqrt{2t} - \sqrt{2}\sin 2\sqrt{2t}$ B) $3\cos 2\sqrt{2t} - 3\sqrt{2}\sin 2\sqrt{2t}$ C) $3\cos 2\sqrt{2t} - \sqrt{2}\sin 2\sqrt{2t}$ D) $\cos 2\sqrt{2t} - 3\sqrt{2}\sin 2\sqrt{2t}$	**B**

78)	$L^{-1}\left[\frac{3s+12}{s^2+8}\right]$ is equal to A) $\cos 2\sqrt{2t} - \sqrt{2}\sin 2\sqrt{2t}$ B) $3\cos 2\sqrt{2t} + 3\sqrt{2}\sin 2\sqrt{2t}$ C) $3\cos 2\sqrt{2t} - \sqrt{2}\sin 2\sqrt{2t}$ D) $\cos 2\sqrt{2t} - 3\sqrt{2}\sin 2\sqrt{2t}$	**B**
79)	$L^{-1}\left[\frac{13s+12}{s^2+8}\right]$ is equal to A) $\cos 2\sqrt{2t} - \sqrt{2}\sin 2\sqrt{2t}$ B)$113\cos 2\sqrt{2t} + 3\sqrt{2}\sin 2\sqrt{2t}$ C) $3\cos 2\sqrt{2t} - \sqrt{2}\sin 2\sqrt{2t}$ D) $\cos 2\sqrt{2t} - 3\sqrt{2}\sin 2\sqrt{2t}$	**B**
80)	$L^{-1}\left[\frac{-s+12}{s^2+8}\right]$ is equal to A) $\cos 2\sqrt{2t} - \sqrt{2}\sin 2\sqrt{2t}$ B)$-\cos 2\sqrt{2t} + 3\sqrt{2}\sin 2\sqrt{2t}$ C) $3\cos 2\sqrt{2t} - \sqrt{2}\sin 2\sqrt{2t}$ D) $\cos 2\sqrt{2t} - 3\sqrt{2}\sin 2\sqrt{2t}$	**B**
81)	$L^{-1}\left[\frac{2}{s^2+9}\right]$ is equal to A) $2\sin 3t$ B) $3\sin 3t$ C) $\frac{2}{3}\sin 3t$ D) $\frac{2}{3}\cos 3t$	**C**
82)	$L^{-1}\left[\frac{3}{s+2} - \frac{2s}{s^2+25}\right]$ is equal to A) $3e^{-2t} - 2\sin 5t$ B) $e^{-2t} - \cos 5t$ C) $3e^{2t} - 2\cos 25t$ D) $3e^{-2t} - 2\cos 5t$	**D**
83)	$L^{-1}\left[\frac{3}{s+2} + \frac{2s}{s^2+25}\right]$ is equal to A) $3e^{-2t} - 2\sin 5t$ B) $e^{-2t} - \cos 5t$ C) $3e^{2t} - 2\cos 25t$ D) $3e^{-2t} + 2\,cos\,5\,t$	**D**

84)	$L^{-1}\left[\frac{13}{s+2}-\frac{2s}{s^2+25}\right]$ is equal to A) $3e^{-2t}-2\sin 5t$ B) $e^{-2t}-\cos 5t$ C) $3e^{2t}-2\cos 25t$ D) $13e^{-2t}-2\cos 5t$	**D**
85)	$L^{-1}\left[\frac{(s+1)^2}{s^3}\right]$is equal to A) $t+\frac{t^2}{2}+\frac{t^3}{3}$ B) $1+2t+\frac{t^2}{2}$ C) $t+\frac{t^2}{2}$ D) $1+t+t^2$	**B**
86)	$L^{-1}\left[\frac{(s-1)^2}{s^3}\right]$is equal to A) $t+\frac{t^2}{2}+\frac{t^3}{3}$ B) $1-2t+\frac{t^2}{2}$ C) $t+\frac{t^2}{2}$ D) $1+t+t^2$	**B**
87)	$L^{-1}\left[\frac{(s+1)^2}{s^3}\right]$is equal to A) $t+\frac{t^2}{2}+\frac{t^3}{3}$ B) $1+2t+\frac{t^2}{2}$ C) $t+\frac{t^2}{2}$ D) $1+t+t^2$	**B**
88)	$L^{-1}\left[\frac{(s+1)^2}{s^4}\right]$ is equal to A) $t+\frac{t^2}{2}+\frac{t^3}{3}$ B) $t+t^2+\frac{t^3}{6}$ C) $t+\frac{t^2}{2}$ D) $1+t+t^2$	**B**
89)	$L^{-1}\left[\frac{(s-1)^2}{s^4}\right]$ is equal to A) $t+\frac{t^2}{2}+\frac{t^3}{3}$ B) $t-t^2+\frac{t^3}{6}$ C) $t+\frac{t^2}{2}$ D) $1+t+t^2$	**B**

90)	$L^{-1}\left[\frac{1}{s^2(s^2+1)}\right]$ is equal to A) $t+\sin t$ B) $t-\sin t$ C) $t-\cos t$ D) $\frac{t^2}{2}-\sinh t$	**B**
91)	$L^{-1}\left[\frac{11}{s^2(s^2+1)}\right]$ is equal to A) $t+\sin t$ B) $11(t-\sin t)$ C) $t-\cos t$ D) $\frac{t^2}{2}-\sinh t$	**B**
92)	$L^{-1}\left[\frac{101}{s^2(s^2+1)}\right]$ is equal to A) $t+\sin t$ B) $101(t-\sin t)$ C) $t-\cos t$ D) $\frac{t^2}{2}-\sinh t$	**B**
93)	$L^{-1}\left[\frac{12}{s^2+9}\right]$ is equal to A) $2\sin 3t$ B) $3\sin 3t$ C) $\frac{12}{3}\sin 3t$ D) $\frac{2}{3}\cos 3t$	**C**
94)	$L^{-1}\left[\frac{12}{s^2-9}\right]$ is equal to A) $2\sin 3t$ B) $3\sin 3t$ C) $\frac{12}{3}\sinh 3t$ D) $\frac{2}{3}\cos 3t$	**C**
95)	$L^{-1}\left[\frac{32}{s^2+9}\right]$ is equal to A) $2\sin 3t$ B) $3\sin 3t$ C) $\frac{32}{3}\sin 3t$ D) $\frac{2}{3}\cos 3t$	**C**
96)	If $F(t)=\cos\sqrt{23}t$, then $L[\cos\sqrt{23}t]$ is equal to A) $\frac{s}{s^2+4}, s>0$ B) $\frac{a}{s^2-a^2}, s>\lvert a\rvert$ C) $\frac{s}{s^2+23}, s>0$ D) $\frac{\sqrt{2}}{s^2+2}, s>0$	**C**

97)	If $F(t) = \cos h\sqrt{23}t$, then $L\left[\cosh\sqrt{23t}\right]$ is equal to A) $\frac{s}{s^2+4}$, $s > 0$ B) $\frac{a}{s^2-a^2}$, $s > \lvert a\rvert$ C) $\frac{s}{s^2-23}$, $s > 0$ D) $\frac{\sqrt{2}}{s^2+2}$, $s > 0$	**C**
98)	If $F(t) = \sin h\sqrt{23}t$, then $L\left[\sinh\sqrt{23t}\right]$ is equal to A) $\frac{s}{s^2+4}$, $s > 0$ B) $\frac{a}{s^2-a^2}$, $s > \lvert a\rvert$ C) $\frac{\sqrt{23}}{s^2-23}$, $s > 0$ D) $\frac{\sqrt{2}}{s^2+2}$, $s > 0$	**C**
99)	$L[8e^{2at} + 15]$ is equal to A) $\frac{1}{s+\log 4} + \frac{5}{s}$ B) $\frac{8}{s-2a} + \frac{15}{s}$ C) $\frac{4}{s^2} + \frac{5}{s}$ D) $\frac{1}{s-4} + \frac{5}{s}$	**B**
100)	$L[18e^{2at} - 15]$ is equal to A) $\frac{1}{s+\log 4} + \frac{5}{s}$ B) $\frac{18}{s-2a} - \frac{15}{s}$ C) $\frac{4}{s^2} + \frac{5}{s}$ D) $\frac{1}{s-4} + \frac{5}{s}$	**B**

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